

Kaweah Hydroelectric Project

Draft Initial Study / Mitigated Negative
Declaration

March 2021



Federal Energy Regulatory
Commission (FERC)
Project Number 298

Draft Initial Study/Mitigated Negative Declaration
for the
Kaweah Hydroelectric Project

Prepared for:

State Water Resources Control Board
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March 25, 2021

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Draft Initial Study/Mitigated Negative Declaration for the Kaweah Hydroelectric Project

Pursuant to:

California Environmental Quality Act, Public Resources Code section 21000 et seq. (CEQA); California Code of Regulations, title 14, section 15000 et seq. (CEQA Guidelines)

Lead Agency:

State Water Resources Control Board

The Kaweah Hydroelectric Project Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) is being made available to the public in accordance with CEQA.

Visit the State Water Board's Kaweah Hydroelectric Project webpage where you can view and download an electronic copy of this Draft IS/MND: www.waterboards.ca.gov.

To receive future email notifications regarding the proposed Kaweah Hydroelectric Project and other projects pursuing water quality certifications from the State Water Board, please subscribe to the Water Rights Water Quality Certification email subscription list.

Instructions on how to sign up for the State Water Board's Water Rights Water Quality Certification email subscription list are outlined below:

1. Visit www.waterboards.ca.gov
2. Provide your name and email address in the required fields.
3. In the categories below the email address and name fields, select "Water Rights," then "Water Rights Water Quality Certification."
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Acronyms

AAQS	Ambient Air Quality Standards
ac-ft	acre-feet
ACHP	Advisory Council on Historic Preservation
ADA	American’s with Disabilities Act
ADCP	Acoustic Doppler Current Profiler
AE	base floodplain where base flood elevations are provided
AGOL	Archaeology Geographic Information System Data Viewer
AMMP	Avian Mortality Monitoring Plan
AN	FEMA regulatory cross section
AO	FEMA regulatory cross section
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
AVM	Acoustic Velocity Meter
BACM	Best Available Control Measures
BCC	Birds of Conservation Concern
BFE	Base Flood Elevation
BLM	Bureau of Land Management
BMI	benthic macroinvertebrate
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALVEG	Classification and Assessment with LANDSAT of Visible Ecological Groupings
CAP	Climate Action Plan
CARB	California Air Resources Board
CCC	California Coastal Commission
CCR	California Code of Regulations
CDF	California Division of Forestry
CDFW	California Department of Fish and Wildlife

CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CIWMP	Countywide Integrated Waste Management Plan
CNDDDB	California Natural Diversity Database
CNEL	Community noise exposure levels
CNPS	California Native Plant Society
CO	carbon monoxide
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRMP	Coordinated Resource Management Plan
CRPR	California Rare Plant Ranking
CRS	Cultural Resource Specialist
CRWQCB	California Regional Water Quality Control Board
CTR	California Toxics Rule
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DMR	Division of Mine Reclamation
DOC	California Department of Conservation
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EAP	Emergency Action Plan
EO	Executive Order
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
ESM	Entrainment Study Measure
FEMA	Federal Emergency Management Agency

FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy Management Act
FMMP	Farmland Mapping and Monitoring Program
FPA	Federal Power Act
FPD	Federally Proposed for Delisting
FPMP	Fish Population Monitoring Plan
FRAP	Fire and Resource Assessment Program
FYLF	foothill yellow-legged frog
GEM	Geologic Energy Management
GHG	greenhouse gas
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HHWE	Household Hazardous Waste Element
HPMP	Historic Properties Management Plan
IBI	Index of Biotic Integrity
IFM	Instream Flow Measure
IRIS	Integrated Risk Information System
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
IWMP	Integrated Waste Management Plan
LAFCO	Local Agency Formation Commission
LANDSAT	The U.S. program that continuously acquires space-based moderate-resolution land remote sensing data
LHMP	Local Hazard Mitigation Plan
LUST	Leaking Underground Storage Tanks
MDL	Method detection limit
MIF	minimum instream flow
MND	Mitigated Negative Declaration
MRL	Method reporting limit
MRL	Method reporting limit
msl	mean sea level
MUN	Municipal and Domestic Supply

MW	megawatts
NAAQS	National Ambient Air Quality Standards
NAGPRA	National American Graves Protection Act
NAHC	Native American Heritage Commission
ND	Negative Declaration
NDFE	Non-disposal Facility Element
NEPA	National Environmental Policy Act
NFHL	National Flood Hazard Layer
NFS	National Forest Service
NHPA	National Historic Preservation Act
NIST	National Institute of Standards and Technology
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Units
O ₃	ozone
OES	Office of Emergency Services
OHP	Office of Historic Preservation
PCA	Pest control advisor
PM	particulate matter
ppm	parts per million
PQL	Practical quantitation limit
PRC	Public Resources Code
Project	Existing Kaweah Project, FERC Project Number 298
PUP	Pesticide Use Permit
QA/QC	quality assurance/quality control
RACT	Reasonable Available Control Measures
RM	river mile
RMP	Resource Management Plan
RPS	Renewable Portfolio Standard

RTFM	Real-time Flow Information Measure
RTMP	Road and Trail Management Plan
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison Company
SGMA	Sustainable Groundwater Management Act
SGP	Stream Gaging Plan
SHPO	California State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLF	Sacred Lands File
SMECP	Sediment Management and Erosion Control Plan
SNF	Sequoia National Forest
SNP	Sequoia National Park
SO ₂	sulfur dioxide
SPPMP	Status Plant Protection and Monitoring Plan
SPWN	Spawning, Reproduction, and/or Early Development
SR	State Route
SREE	Source Reduction and Recycling Element
SSC	Species of Special Concern
ST	State threatened
State Water Board	State Water Resources Control Board
SUP	Special Use Permit
SWB	State Water Board
SWPPP	Storm Water Pollution Prevention Plan
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
TKN	Total Kjeldahl Nitrogen
TL	Total length
TPCLMM	Transmission, Power, and Communication Line Maintenance Measure
TSP	Technical Study Plan
TSR	Technical Study Report
TWG	Technical Working Group

USACE	United States Army Corps of Engineers
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
USFS	United States Department of Agriculture – Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VIPMP	Vegetation and Integrated Pest Management Plan
VMT	vehicle miles traveled
VOC	Volatile organic compounds
VRM	Visual Resource Management
WMMM	Wildlife Mortality Monitoring Measure
WMMP	Wildlife Mortality Monitoring Plan
WPT	western pond turtle
WQMP	Water Quality Monitoring Plan

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1 Introduction

The State Water Resources Control Board (State Water Board) has prepared this Initial Study and Mitigated Negative Declaration (IS/MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of Southern California Edison Company's (SCE), Kaweah Hydroelectric Project (Proposed Project).

The Proposed Project is located on the Kaweah River and East Fork Kaweah River near the community of Three Rivers in Tulare County, California, on the western slope of the Sierra Nevada. The Proposed Project is described in detail in Section 2.3, Proposed Project. This document has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) of 1970 (Pub. Resources Code, § 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). This IS/MND relies on expert opinion, technical studies, and other evidence to substantiate its findings.

1.1 Intent and Scope of this Document

This IS/MND reflects an evaluation of the Proposed Project's environmental effects at a project level (Cal. Code Regs., tit. 14, § 15378). The State Water Board, as the CEQA Lead Agency, will consider the Proposed Project's potential environmental impacts when determining whether to approve them. The intent of this IS/MND is to provide the public and decision-making agencies with information about the environmental impacts that could result from implementation of the Proposed Project.

This IS/MND describes the Proposed Project and its environmental setting, including existing conditions; identifies the Proposed Project's potential environmental impacts, and presents mitigation measures that would be implemented to avoid, reduce, or mitigate potentially significant impacts.

1.2 Public Review Process

Public involvement is an integral part of the CEQA environmental review process. CEQA requires the disclosure of information about the Proposed Project to the public and agency decision-makers and seeks to foster public participation and informed decision making.

This document is being circulated for a 30-day public review period to the Office of Planning and Research, to the State Clearinghouse for distribution to appropriate resource agencies, to all individuals who have requested a copy, and to the Tulare County Clerk for posting.

A Notice of Intent has been distributed to the interested parties mailing list identified by FERC. The Notice of Intent identifies locations where the document will be available for public review, including online at CEQA.net, and invites interested parties to provide written comments.

All comments received by the date identified for closure of the public comment period in the Notice of Intent will be considered by the State Water Board during development of the final IS/MND. Comments can be submitted electronically or by mail to:

Email: WR401Program@waterboards.ca.gov

or

State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
Attention: Mr. Chase Hildeburn
P.O. Box 2000
Sacramento, California 95812-2000

In addition, the State Water Board has provided the Notice of Intent to adopt a MND by publication, in accordance with section 15072, subdivision (b) of the CEQA Guidelines, by noticing in the Three Rivers Commercial-News and Visalia Times-Delta newspapers in Three Rivers, California, and Visalia, California, respectively. Copies of the Notice of Intent are posted at the Tulare County Clerk's office. The IS/MND is available on the second floor of the State Water Board's headquarters office located at 1001 I Street, Sacramento, California 95814. Please refer to the Notice of Intent for additional hard copy locations and appointment information.

1.3 Organization of this Document

This IS/MND contains the following components:

- **Chapter 1 – Introduction:** Provides a brief description of the intent and scope of this IS/MND, the public and agency involvement process under CEQA, and the organization of and terminology used in this IS/MND.
- **Chapter 2 – Proposed Project:** This chapter includes the Proposed Project's description, including existing facilities; operations; management plans; and relevant potential permits and approvals.
- **Chapter 3 – Environmental Checklist:** Includes an environmental setting description for each resource topic and identifies the Proposed Project's anticipated environmental impacts, as well as any mitigation measures that would be required to reduce potentially significant impacts to a less than-significant level. This chapter also includes the environmental checklists used to

assess the Proposed Project's potential environmental effects, which is based on the model provided in Appendix G of the CEQA Guidelines.

1.4 Agency Participation and Application

Compliance with federal, state, and local regulations, as well as environmental permits, is required for operation of the Proposed Project. SCE and its contractors should adhere to all applicable requirements. Anticipated major federal and state permit approvals identified for the licensing and operation of the Proposed Project is described below, and summarized in Table 1–1.

1.5 Water Quality Certification

Section 401 of the federal Clean Water Act requires applicants for federal licenses that may result in a discharge into navigable waters to provide the licensing agency a certification from the applicable state agency that the project will comply with state water quality laws. (33 U.S.C. section 1341(a)(1), (d)). As part of the FERC licensing process, the State Water Board may issue or deny a water quality certification for the Kaweah Hydroelectric Project. If the State Water Board issues a certification, the conditions of the certification become mandatory conditions in the FERC license for the Proposed Project.

When the State Water Board considers issuing a water quality certification for a project, it evaluates whether the project will comply with applicable water quality standards and other appropriate requirements of state law and determines conditions necessary to protect water quality in California.

The Regional Water Quality Control Boards (RWQCB) prepare basin plans that designate the beneficial uses of waters to be protected and establish the water quality objectives necessary to protect those uses, as required under section 303 of the Clean Water Act (33 U.S.C. section 1313) and sections 13240 and 13241 of the California Water Code. When establishing water quality objectives, the RWQCB consider the past, present, and future beneficial uses of the water bodies; their environmental characteristics; economics; and water quality conditions that could be reasonably achieved through coordinated control of the factors affecting water quality. When the State Water Board considers issuing a water quality certification for a project, it evaluates whether the project will comply with the applicable basin plan and whether the beneficial uses of the applicable water bodies will be protected.

The State Water Board and United States Environmental Protection Agency approved the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) (CVRWQB 2018). The Basin Plan designates the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. The Basin Plan covers the Proposed

Project area and identifies eighteen surface water beneficial uses. Therefore, issuance of a certification requires an analysis of the Proposed Project’s effect on water quality, including whether the designated beneficial uses identified in the Basin Plan will be adequately protected. The determination of the Proposed Project’s ability to adequately protect these beneficial uses requires an understanding of the Kaweah River water quality, including the existing conditions and the potential to support the full range of beneficial uses. These beneficial uses also apply to the tributaries of the Kaweah River, which include the Marble Fork Kaweah River, the Middle Fork Kaweah River, and the East Fork Kaweah River. The State Water Board will use CEQA documents—including any comments received from the public, tribes, or agencies during the certification process to inform and aid its review of the Proposed Project’s effects.

1.6 Overview of Potential Future Permit Approval and Consultation Requirements for the Proposed Project

In addition to the State Water Board water quality certification, compliance with federal and state regulations, as well as other environmental permits, is required for operation and maintenance of the Proposed Project.

The FERC license for the Proposed Project is subject to requirements under the Federal Power Act (FPA) and other applicable statutes, such as Endangered Species Act (ESA), and National Historic Preservation Act (NHPA). Through the FERC licensing process, SCE has consulted with the potentially applicable federal and state agencies. Table 1–1 presents an overview of the various agency responsibilities and permits that may be required for the Proposed Project.

Table 1–1. Overview of Potential Future Permit Approval and Consultation Requirements for the Kaweah Hydroelectric Project

Agency	Jurisdiction, Permits, Approvals & Consultations
Federal Agencies	
FERC	FERC is the lead federal agency under the NEPA process for the Proposed Project. Under the FPA, FERC has authority to issue licenses for up to 50 years for the construction, operation, and maintenance of certain hydroelectric projects. Under Section 10(a) of the FPA, FERC must consider a project’s consistency with federal and state comprehensive plans for improving, developing, or conserving a waterway. Specifically, Section 10(a) instructs FERC to solicit recommendations from resource agencies and Indian tribes (if affected by the

Agency	Jurisdiction, Permits, Approvals & Consultations
	project) on how to make a project more consistent with federal or state comprehensive plans.
USFWS	<p>Under the ESA, the USFWS has jurisdiction over federally listed terrestrial and freshwater species. Under section 7 of the ESA, USFWS is required to consult with the lead federal agency to determine whether a proposed action is likely to jeopardize the continued existence of, or destroy or adversely modify critical habitat of, federally listed terrestrial and freshwater species¹.</p> <p>Under Section 10(j) of the FPA FERC is required to consider resource agency recommendations pursuant to the Fish and Wildlife Coordination Act to protect, mitigate damages to, and enhance fish and wildlife resources (including related spawning grounds and habitat) affected by the development, operation, and management of a project.</p> <p>Compliance with these acts may require issuance by the USFWS of permit(s) for activities that could adversely affect these species.</p>
Bureau of Land Management/National Park Service	<p>Under Section 4(e) and 10(a) of the FPA FERC is required to consider resource agency recommendations, including those from BLM and the NPS. Agency 4(e) and 10(a) conditions address the protection of sensitive, threatened and endangered species, and terrestrial, cultural, recreational, and other public resources, pursuant to the ESA, NEPA, Federal Land Policy Management Act (FLPMA), Outdoor Recreation Act, NPS Organic Act, and Wild and Scenic Rivers Act².</p> <p>Herbicide use on BLM-owned lands historically has been conducted by SCE under Pesticide Use Proposal Number 2018-CA-160-1. SCE currently contracts with third-parties for herbicide application. The contractor obtains its own separate permit.</p>

¹ In a letter dated December 14, 2016, in accordance with 50 CFR §402.08, SCE requested that FERC authorize SCE to initiate informal consultation on behalf of FERC, with the USFWS regarding the relicensing of the Proposed Project. In response, FERC designated SCE as a non-federal representative for the purposes of conducting informal Section 7 consultation under the ESA on February 10, 2017.

² In a letter dated June 12, 2020, BLM and NPS submitted preliminary 4(e) conditions and 10(a) recommendations to FERC. At this time, the preliminary 4(e) conditions have not been finalized, and recommendations have not been accepted.

Agency	Jurisdiction, Permits, Approvals & Consultations
State Agencies	
State Water Board	<p>As previously explained, section 401 of the CWA requires that prior to the issuance of a federal license or permit for an activity that may result in a discharge into navigable waters, an applicant must first obtain a certification issued by the State Water Board or the appropriate California Regional Water Quality Control Board.</p> <p>The State Water Board’s discretionary action under CEQA is the issuance, issuance with conditions, or denial of a water quality certification for the Proposed Project under section 401 of the CWA. Under CEQA, the State Water Board is the lead agency for the Proposed Project and is responsible for issuing the MND, adopting CEQA findings, and filing an associated Notice of Determination.</p>
California Office of Historic Preservation	<p>Under section 106 of the National Historic Preservation Act, lead federal agencies must consult with appropriate state and local officials, Indian tribes, and members of the public regarding the identification of cultural resources and preparation of a Memorandum of Agreement for adverse effects on resources listed in or eligible for listing on the National Register of Historic Properties. The California Office of Historic Preservation’s State Historic Preservation Officer participates in section 106 consultation and reviews and approves the Historic Properties Management Plan³.</p>
CDFW	<p>CDFW is responsible for maintaining native fish, wildlife, plants, and natural communities in California, as well as administering the California Endangered Species Act.</p> <p>Under the FPA, CDFW provides comments and section 10(j) recommendations on proposed hydroelectric projects.</p> <p>Under CEQA, CDFW is a Trustee and Responsible Agency with jurisdiction over natural resources affected by a project that are held in trust for the people of the State of California, such as the fish and wildlife of the state, designated rare or</p>

³ In a letter dated December 14, 2016, in accordance with 36 CFR §800.2(c)(4), SCE requested that FERC authorize SCE to initiate informal consultation on behalf of FERC, with the California State Historic Preservation Officer and others regarding the relicensing of the Proposed Project. In response, FERC designated SCE as a non-federal representative for the purposes of conducting informal Section 106 consultation under the NHPA on February 10, 2017.

Agency	Jurisdiction, Permits, Approvals & Consultations
	endangered native plants, game refuges, and ecological reserves.
California Native American Heritage Commission (NAHC)	Under section 106 of the National Historic Preservation Act, lead federal agencies must consult with appropriate state and local officials, Indian tribes, and members of the public regarding the identification of cultural resources. The NAHC participates in section 106 consultation and identifies, catalogs, and protects Native American cultural resources. The NAHC also oversees the handling of inadvertently discovered Native American human remains and burial items in California. In addition, the NAHC assists CEQA lead agencies with the identification of sacred lands and California Native American tribes traditionally and culturally affiliated with geographic areas.
Local Agencies	
Tulare County	Vegetation management on privately-owned land is conducted by SCE under Pesticide Use Proposal Number 5460929-2019-V1 with Tulare County. SCE currently contracts with third-parties for herbicide application.

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2 Project Description

2.1 Overview

For the purposes of the CEQA analysis, the project being considered by the State Water Board is issuance of a water quality certification, pursuant to section 401 of the federal Clean Water Act (CWA), for the relicensing of the Proposed Project, with appropriate conditions to ensure that the Proposed Project is operated in a manner that is protective of water quality and the designated beneficial uses of water. The Proposed Project under CEQA includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. Section 2.2 provides a description of the existing Kaweah Project and Section 2.3 provides a description of the Proposed Project.

The Proposed Project is located on the Kaweah River and East Fork Kaweah River near the community of Three Rivers in Tulare County, California, on the western slope of the Sierra Nevada. An overview of the major facilities and land jurisdictions in the vicinity are shown on Figure 2–1.

The Proposed Project consists of three developments: Kaweah 1, Kaweah 2, and Kaweah 3, which commenced operation in June 1899, February 1905, and May 1913, respectively. The Proposed Project has limited storage capacity (11.93 acre-feet [ac-ft]) and is operated in a “run-of-river” mode. The total dependable generating capacity is 8.85 megawatts (MW). Water captured at diversion structures⁴ (described in detail in Section 2.2.2) is transported through a connecting flowline and penstock to the powerhouses and then returned to the river through the respective powerhouse tailraces. Project facilities are shown on Figure 2–2a through Figure 2–2h.

Portions of the Kaweah 1 and 3 developments are located within the Sequoia National Park (SNP) and are not part of SCE’s FERC relicensing application. All Kaweah Hydroelectric Project facilities located within the SNP are currently operated under a

⁴ There are two water user diversions (WUD) off of the Kaweah 1 Flowline: Bear WUD and Summit WUD. There are four WUDs on the Kaweah 2 Flowline: Flume 5 WUD, Flume 6 WUD, Canal 9 WUD, and Flume 14 WUD. Water for the Kaweah 3 Development is diverted at two locations: (1) the Middle Fork Diversion Dam located on the Middle Fork Kaweah River; and (2) the Marble Fork Diversion Dam located on the Marble Fork Kaweah River. Both of these diversions are located within the SNP and are operated under a SUP and are, therefore, not part of SCE’s FERC relicensing.

Special Use Permit (SUP) (Permit Number PWR-SEKI-6000-2016-015) issued to SCE by the National Park Service (NPS) (NPS 2016). The current SUP expires on September 8, 2026. Since these facilities are part of the FERC relicensing, they are not addressed in the environmental analysis in this document. Separate environmental analysis will be required for any CWA water quality certification for portions of the Kaweah Hydroelectric Project on SNP.

2.2 Existing Project

2.2.1 Existing FERC Boundary

The existing FERC boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the Bureau of Land Management (BLM) and 144.54 acres of SCE-owned or private land.

2.2.2 Existing Project Facilities

Existing Kaweah Project facilities include diversions; flowlines; forebays; penstocks; powerhouses and switchyards; transmission lines; power lines; communication lines; gages; access roads and trails; and ancillary and support facilities under FERC jurisdiction. These existing facilities are described below.

2.2.2.1 *Diversions Dams and Pools*

Kaweah 1 Diversion Dam and Pool

The Kaweah 1 Diversion is located on the East Fork Kaweah River. The diversion structure is a 6-foot high overflow concrete gravity dam, with a crest length of 20 feet at an elevation of 2,583 feet. The Kaweah 1 Diversion Pool has a design and current capacity of approximately 0.03 ac-ft. The dam's outlet works is a 6-foot high, 3-foot wide, unlined tunnel controlled by a manually operated slide gate. The outlet works has a maximum capacity of 24 cubic feet per second (cfs). The tunnel extends approximately 50 feet and empties into a sandbox (sediment trap) at the downstream end. The sandbox has a spillway crest elevation of 2,580 feet. Water leaving the sandbox flows through a trash rack and a 36-inch by 36-inch slide gate into the Kaweah 1 Flowline (24 cfs capacity).

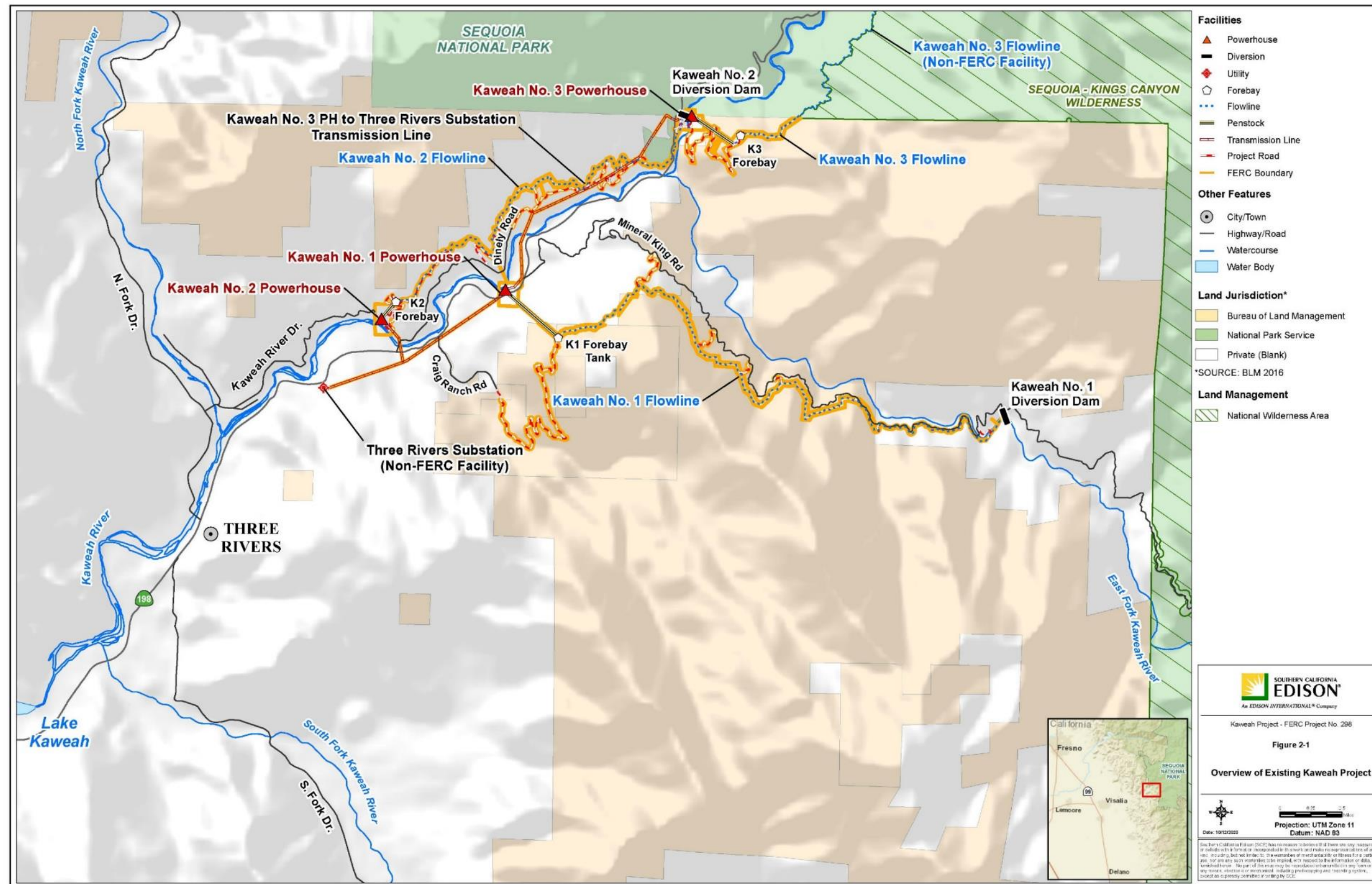


Figure 2-1 Overview of Existing Kaweah Project

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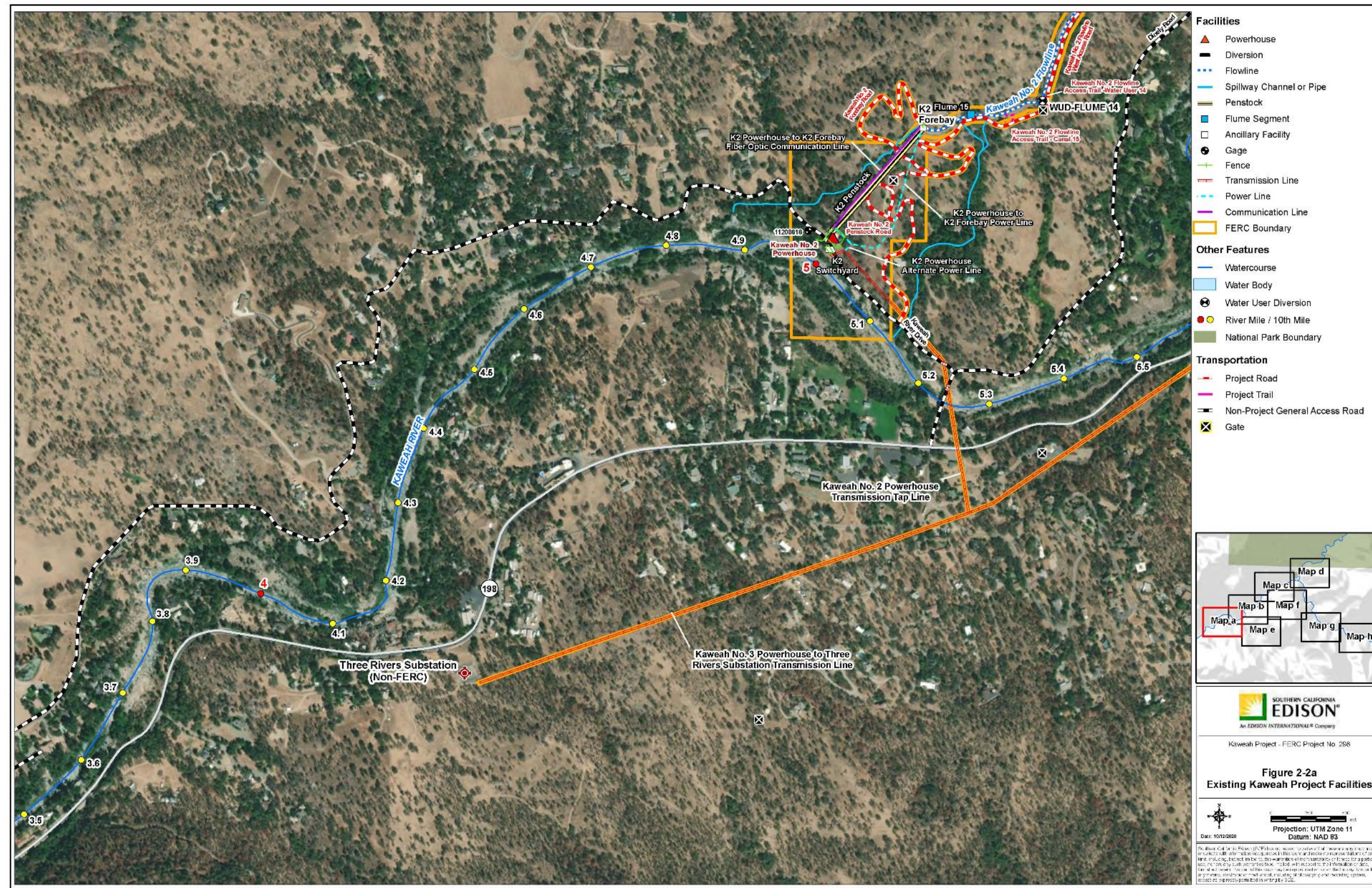


Figure 2-2a Existing Kaweah Project Facilities (Map A)

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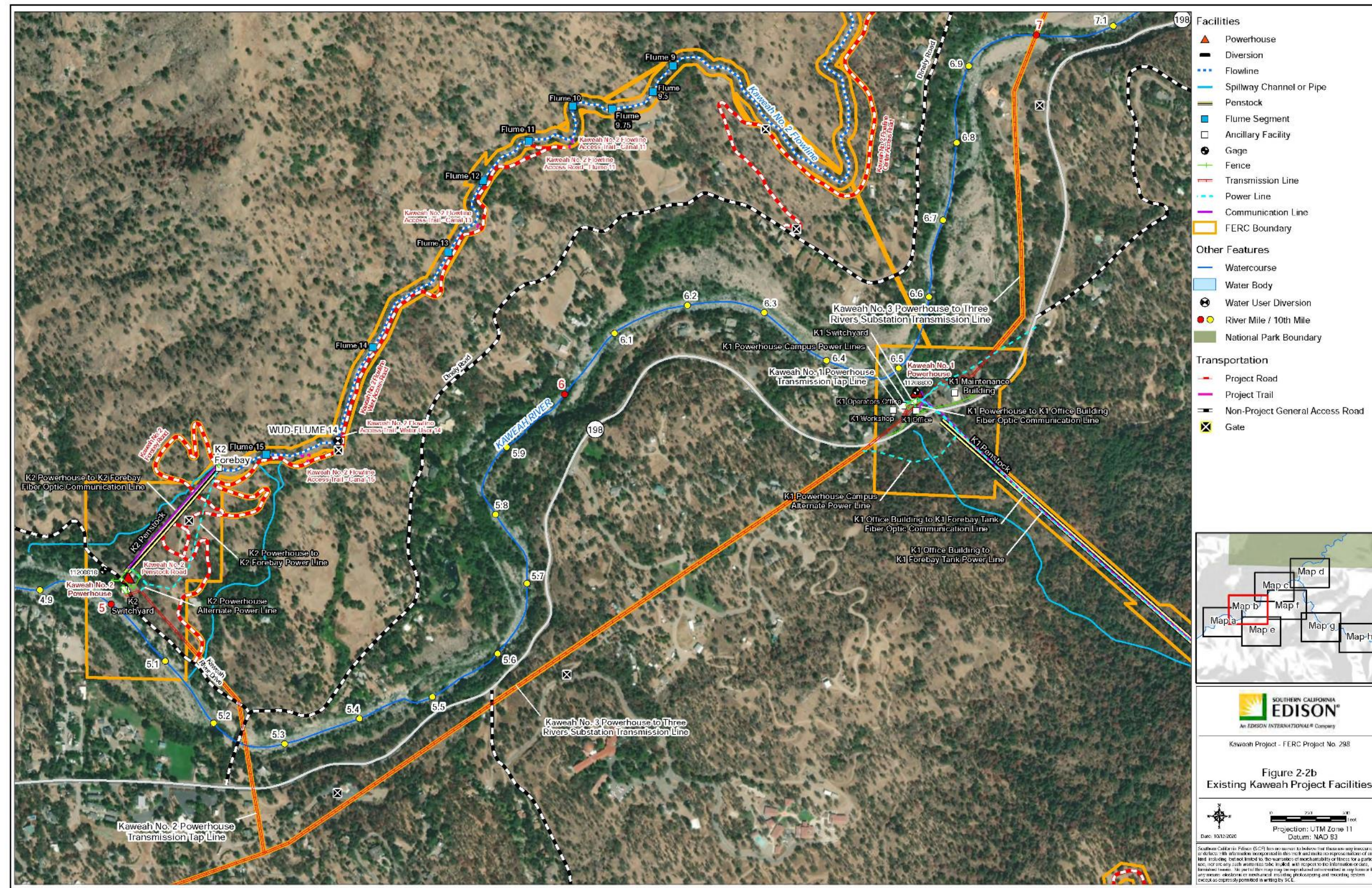


Figure 2-2b Existing Kaweah Project Facilities (Map B)

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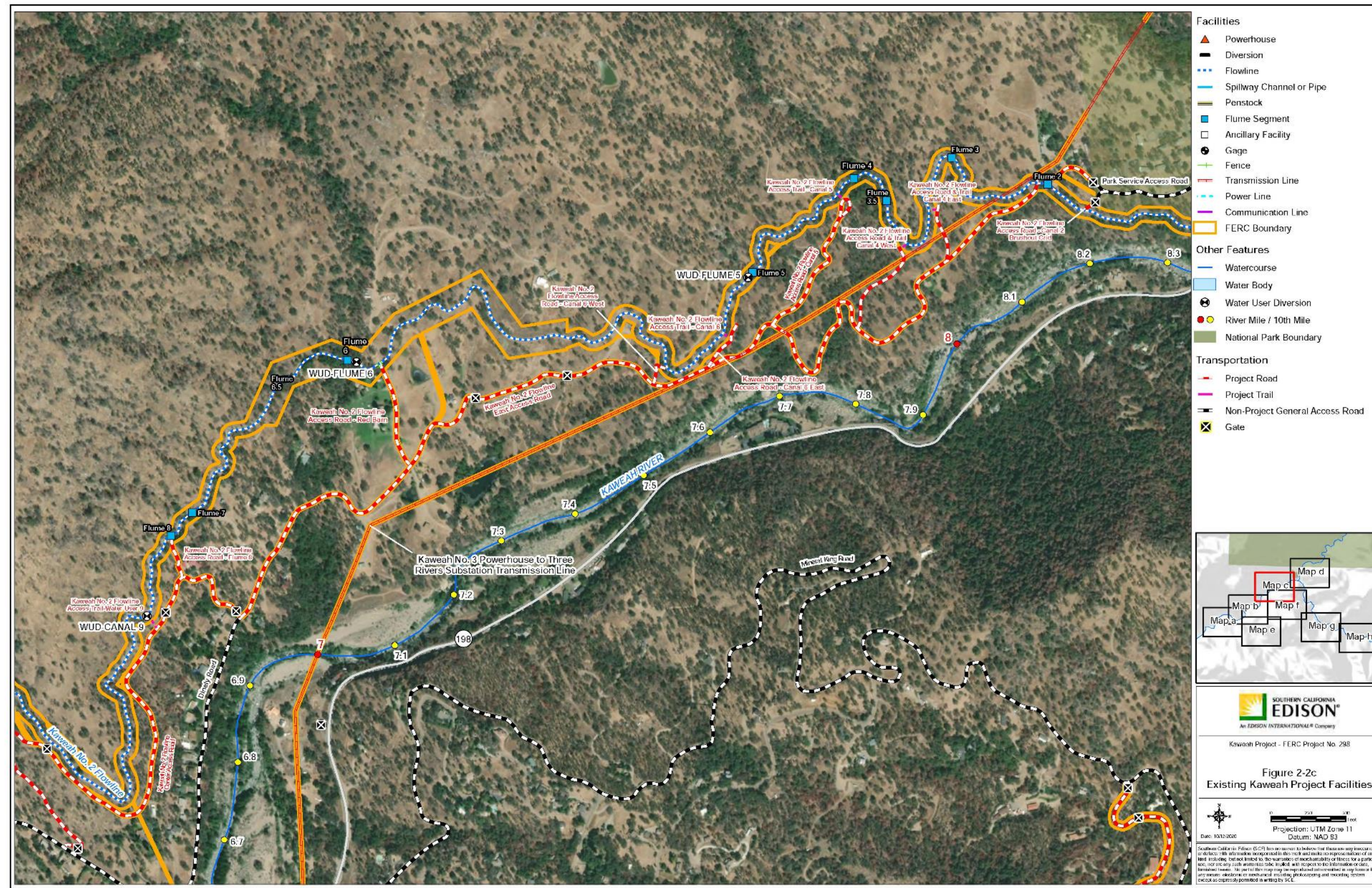


Figure 2-2c Existing Kaweah Project Facilities (Map C)

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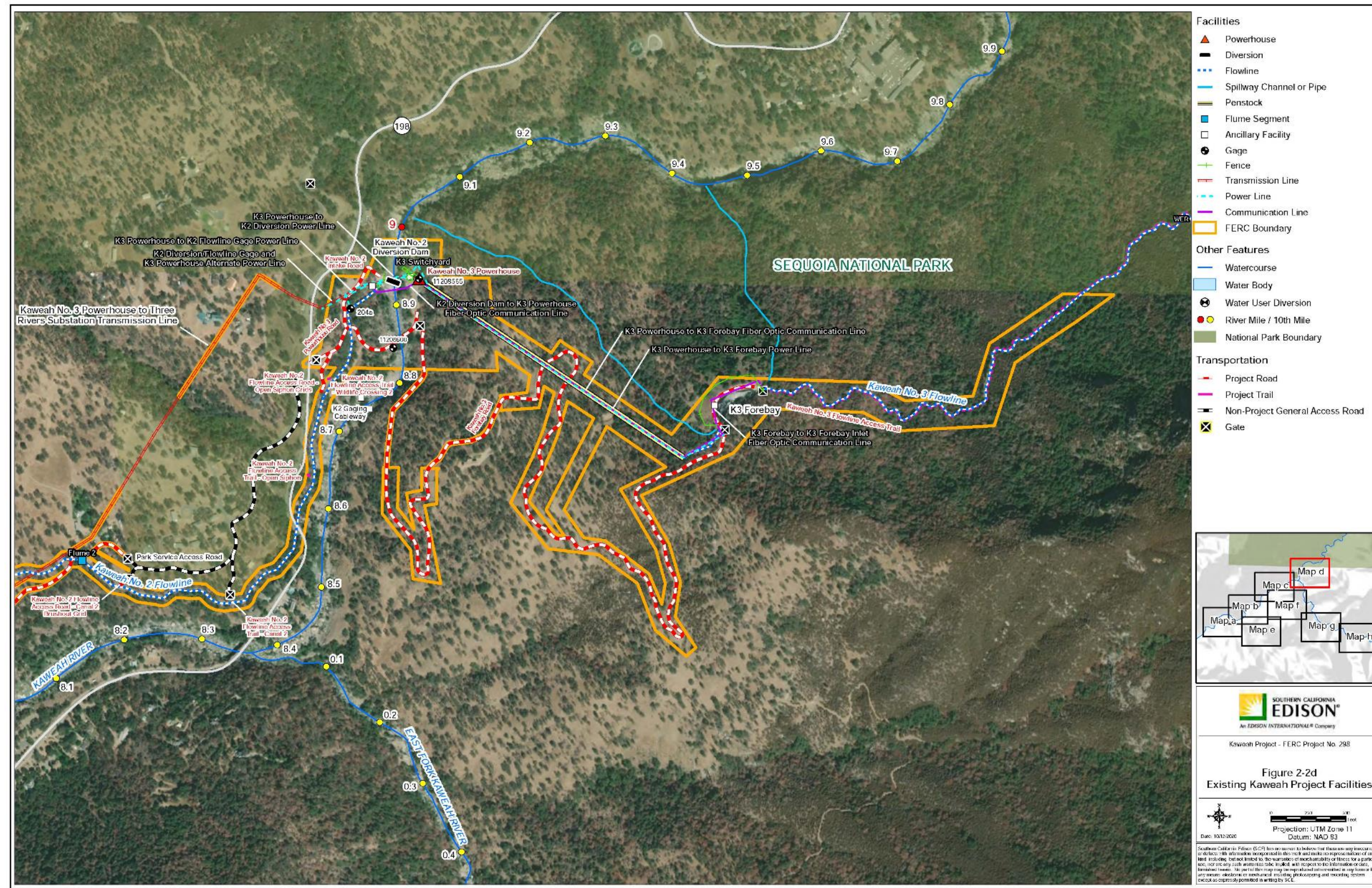


Figure 2-2d Existing Kaweah Project Facilities (Map D)

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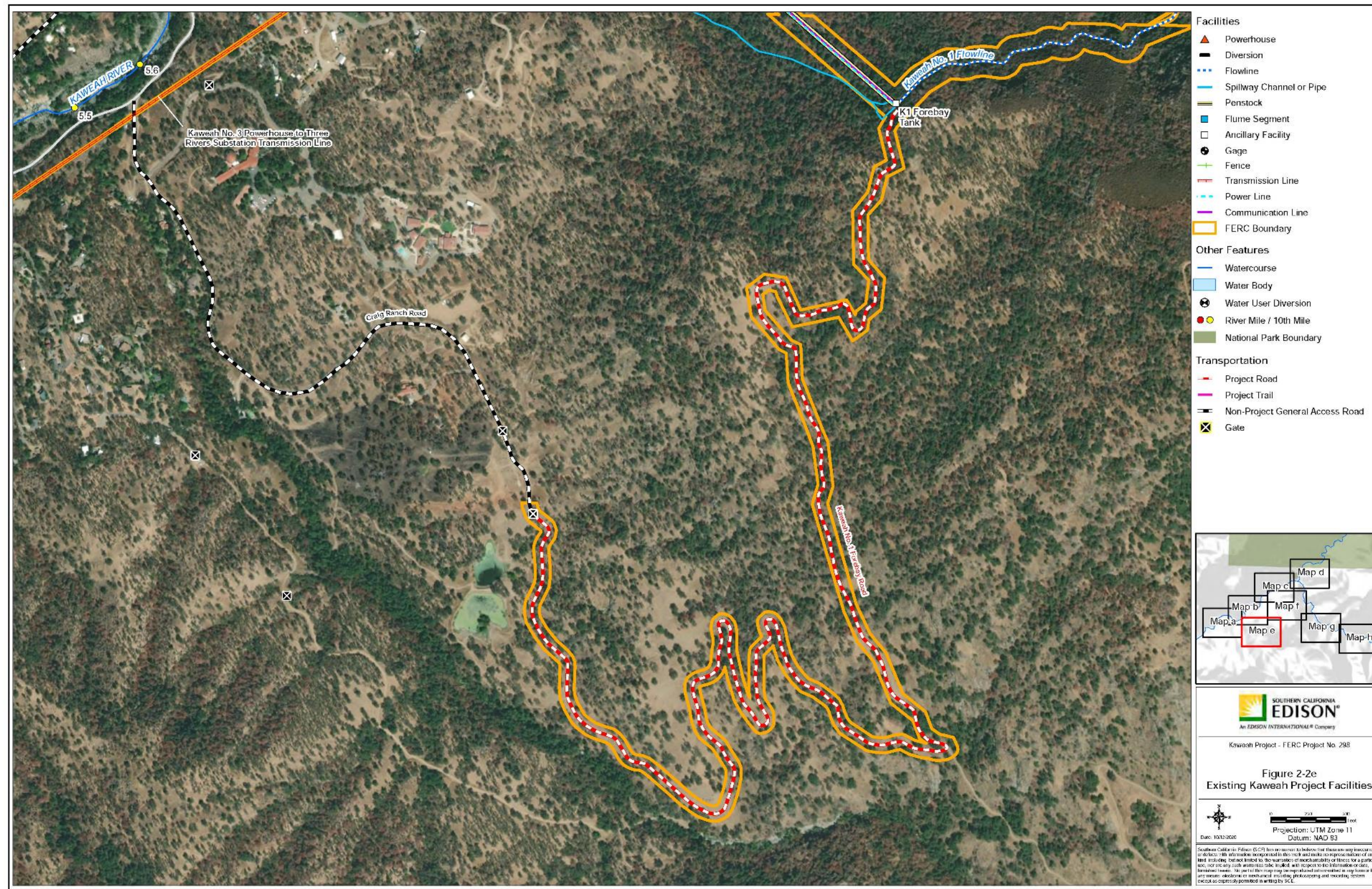


Figure 2-2e Existing Kaweah Project Facilities (Map E)

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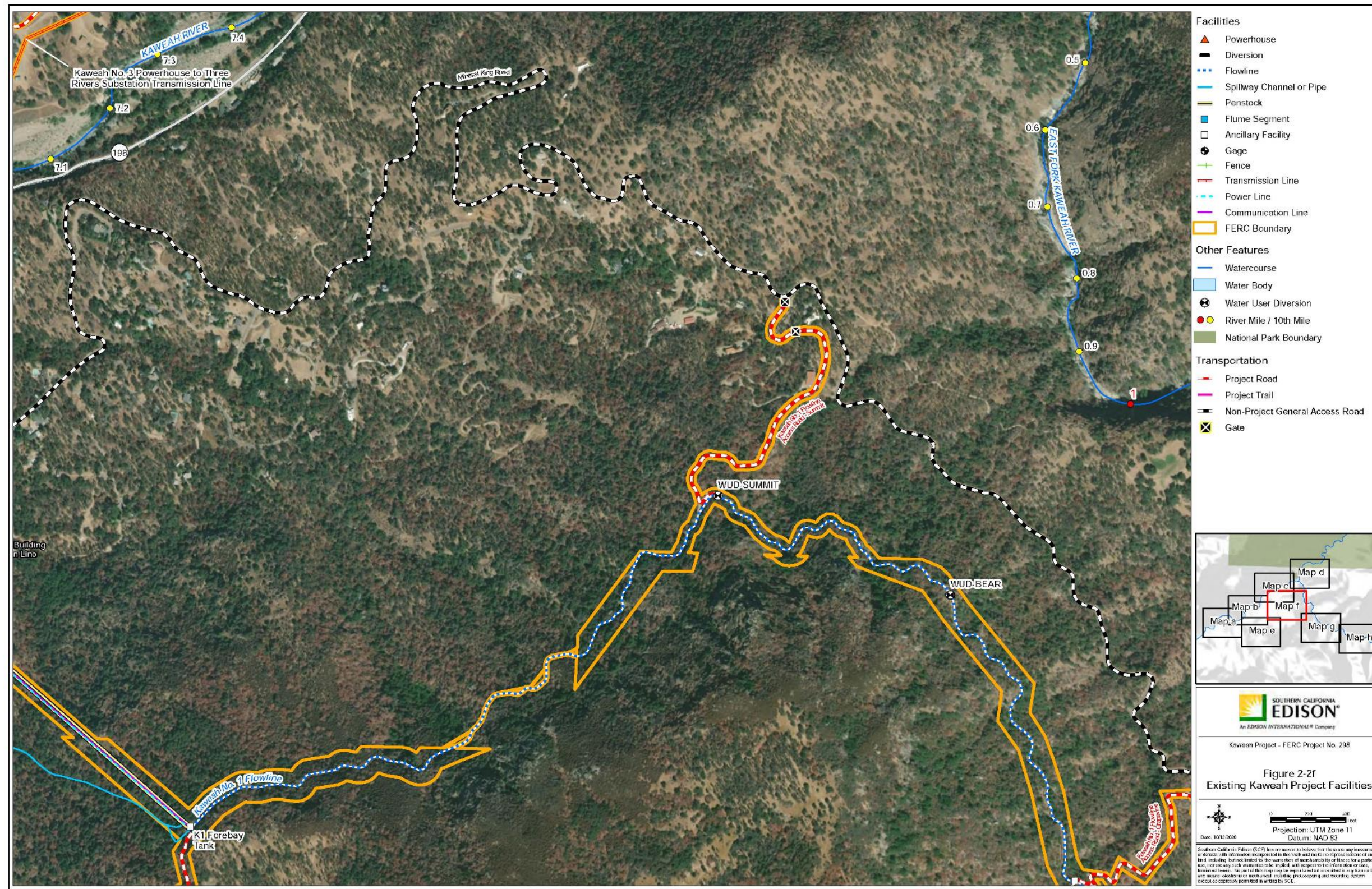


Figure 2-2f Existing Kaweah Project Facilities (Map F)

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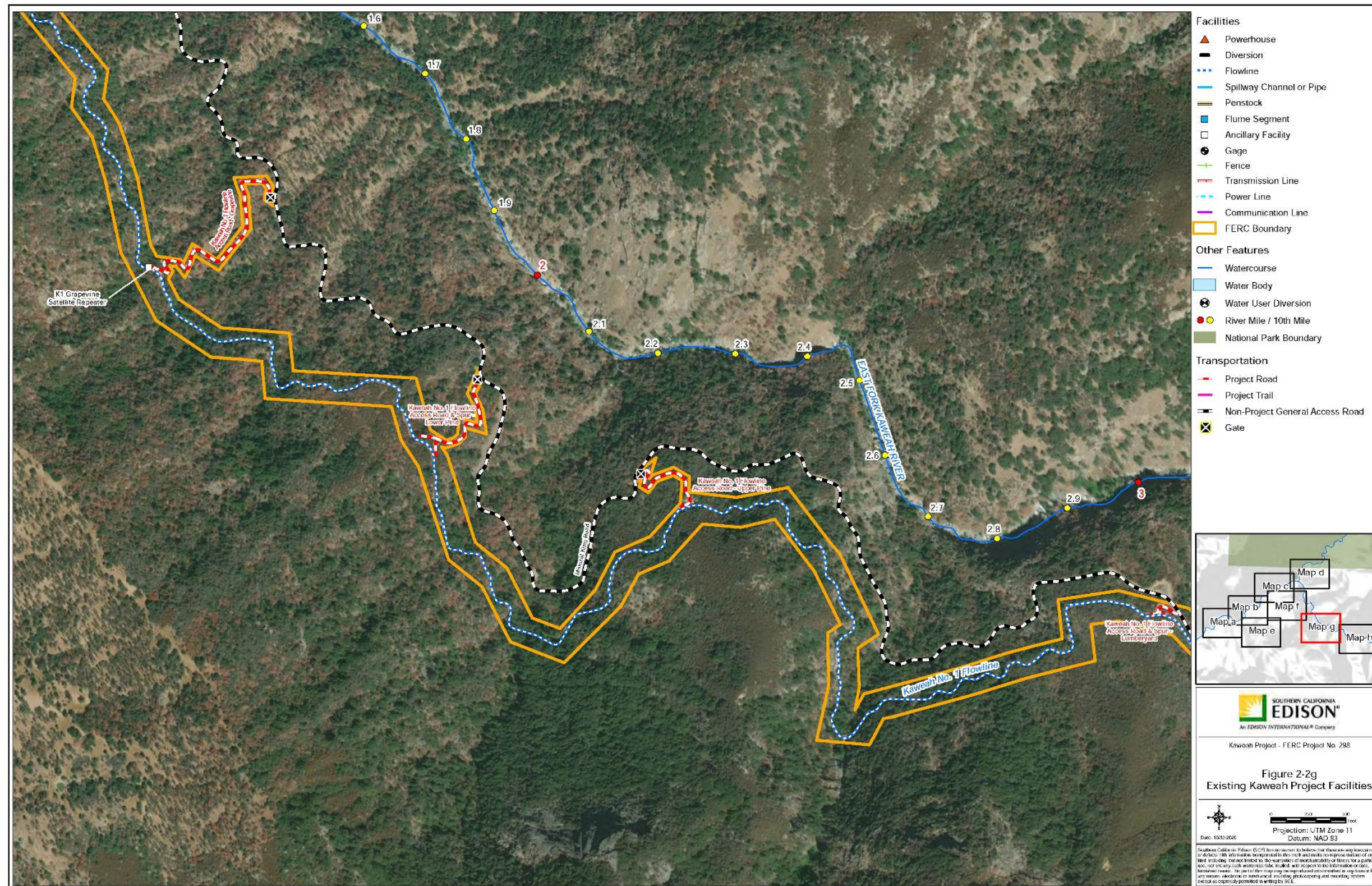


Figure 2-2g Existing Kaweah Project Facilities (Map G)

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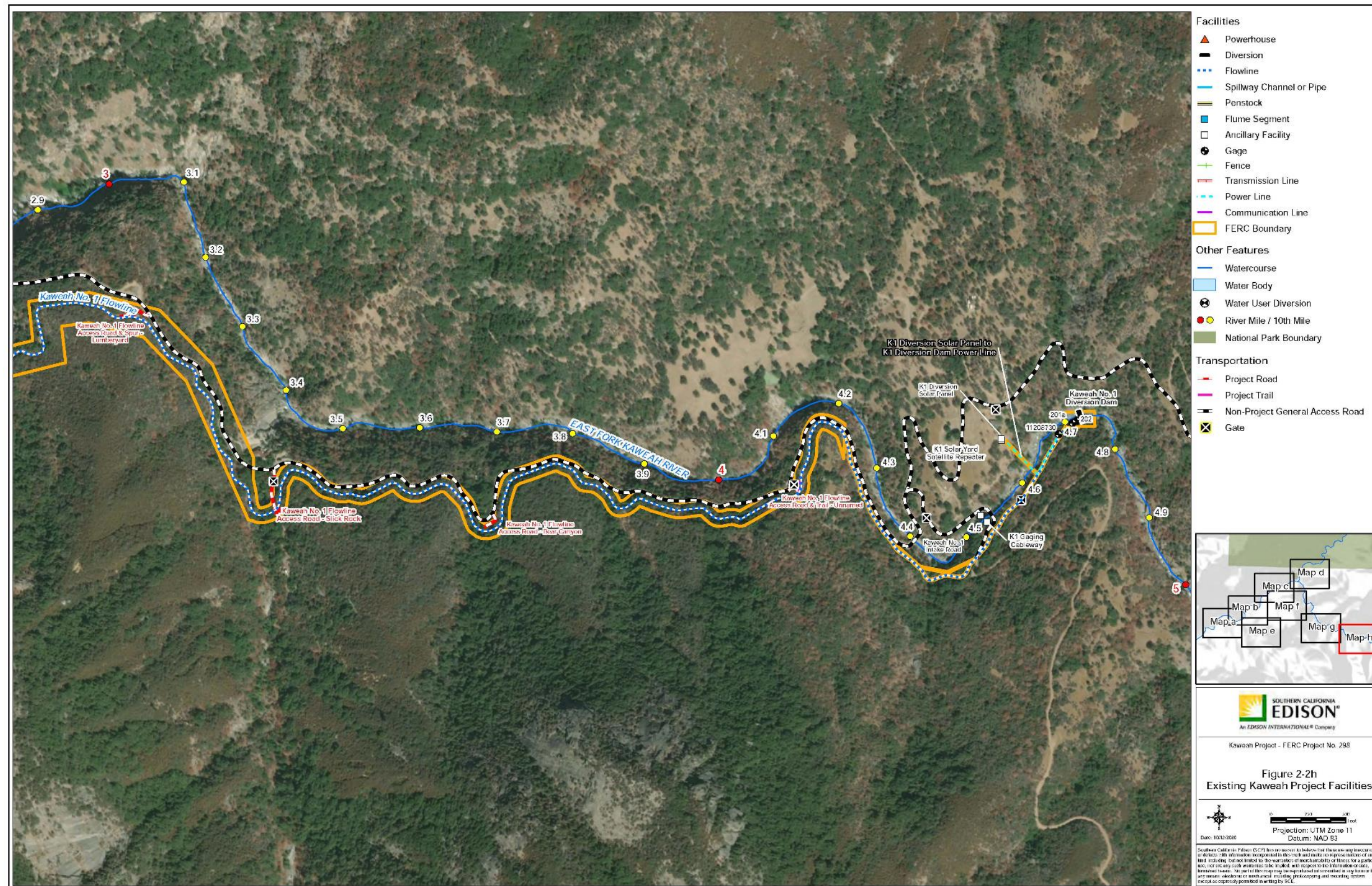


Figure 2-2h Existing Kaweah Project Facilities (Map H)

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Kaweah 2 Diversion Dam and Pool

The Kaweah 2 Diversion is located on the Kaweah River. The diversion structure is a 7-foot high masonry overflow gravity dam, with an overall crest length of 161 feet at an elevation of 1,365 feet. The Kaweah 2 Diversion Pool has a design capacity of approximately 1 to 2 ac-ft. Over time, the diversion pool has filled in with sediment and it currently has a capacity of approximately 0.2 ac-ft. The outlet works has a maximum capacity of 100 cfs. A trash rack protects the intake at the upstream dam face. The minimum instream flow (MIF) release pipe comes off of the concrete tunnel and releases into the Kaweah River before entering the Kaweah 2 Flowline (87 cfs capacity).

2.2.2.2 Flowlines

Kaweah 1 Flowline

The Kaweah 1 Flowline consists of an elevated steel flume supported by a wooden support structure. The flowline traverses 30,723 feet along the south side of East Fork Kaweah River Canyon from Kaweah 1 Diversion slide gate to the Kaweah 1 Forebay Tank. The flowline has a maximum diversion capacity of approximately 24 cfs. When flows are insufficient to meet MIF and water deliveries, SCE maintains a continuous flow of up to 1 cfs in the Kaweah 1 Flowline to deliver up to 2 miner's inches (0.04 cfs) of water to local users (SCE 2019, Volume 3, Exhibit E, Section 3.2). There are two water user diversions (WUD) off of the Kaweah 1 Flowline: Bear WUD and Summit WUD.

Kaweah 2 Flowline

The Kaweah 2 Flowline is approximately 21,607 feet in length, including 16,738 feet of concrete ditch; 3,822 feet of steel flume comprised of 19 segments; and 1,047 feet of 50inch diameter steel pipe. The flowline generally parallels the north side of the Kaweah River extending from the Kaweah 2 Diversion Dam to the Kaweah 2 Forebay. The flowline has a maximum diversion capacity of approximately 87 cfs. Water is delivered by SCE to local users at four delivery points along the Kaweah 2 Flowline, as follows:

- Flume 5 WUD and Flume 6 WUD: 4.0 miner's inches⁵;
- Canal 9 WUD: 2.0 miner's inches;
- Flume 14 WUD: 26 miner's inches.

⁵ In Southern California, one miner's inch is equal to 0.020 cubic feet per second (cfs).

Kaweah 3 Flowline

A short segment of the Kaweah 3 Flowline is part of the Proposed Project and consists of a 2,975-foot long concrete box flume that conveys water to the Kaweah 3 Forebay. The flowline has a maximum diversion capacity of approximately 97 cfs. The portion of the Kaweah 3 Flowline outside the Proposed Project area is located within the SNP and is 2.77 miles long. This portion is not part of the Proposed Project and is operated under a SUP.

2.2.2.3 Forebays

Kaweah 1 Forebay Tank

The Kaweah 1 Forebay consists of a 24-foot diameter steel tank with a capacity of 0.18 ac-ft. Water enters the forebay tank from the Kaweah 1 Flowline and exits via the Kaweah 1 Penstock. Overflow from the Kaweah 1 Forebay Tank is directed through a short spillway flume (Project facility) into a natural channel located adjacent to the penstock. Once in the natural channel, the water travels approximately 0.72 mile downslope before flowing into the Kaweah River just south of the Kaweah 1 Powerhouse Campus. In addition, a low-level outlet in the forebay tank is routinely opened during normal operations to flush sand and fine sediment from the bottom of the tank into the adjacent natural channel.

Kaweah 2 Forebay

The Kaweah 2 Forebay is an enlargement of the Kaweah 2 Flowline. The forebay extends for a distance of 180 feet and has a cross-section 13 feet wide by 14 feet deep and a capacity of 0.75 ac-ft. From the forebay, flow is conveyed to the Kaweah 2 Powerhouse through diversion at the Kaweah 2 Penstock. At the Kaweah 2 Forebay, up to 87 cfs can overflow into three concrete-lined spillways. The primary spillway chute is located adjacent to the forebay and receives spill flows up to 40 cfs. Water from the spillway chute enters a natural channel and flows approximately 0.23 mile downslope before converging with the Kaweah 2 Powerhouse Tailrace prior to entering the Kaweah River. The other two spillways are located along the flowline, approximately 300 feet and 500 feet upstream of the forebay and can receive spills up to a combined 47 cfs. Spillway flows enter two natural channels that converge approximately 220 feet downslope from the flowline. After converging, the natural channel extends 0.3 mile before discharging into the Kaweah River, approximately 0.16 mile upstream of the Kaweah 2 Powerhouse. In addition, the forebay has several low-level outlets which are routinely opened to flush small accumulation of sand and fine sediment from the bottom.

Kaweah 3 Forebay

The Kaweah 3 Forebay is an embankment concrete forebay with a capacity of approximately 11 ac-ft. At the downstream end of the forebay, water is released into a 42-inch steel pipe which connects to the Kaweah 3 Penstock. At the Kaweah 3 Forebay, up to 97 cfs of flow can enter into an approximately 75-foot long concrete-lined spillway chute that begins at the upstream end of the forebay. The spillway chute discharges into an adjacent natural channel that flows approximately 0.3-mile downslope into the Kaweah River (within the SNP boundary). In addition, a low-level outlet is used to drain the forebay to conduct sediment management and Project maintenance activities. Water released from the low-level outlet enters a short concrete chute. The chute discharges into an adjacent natural channel that flows approximately 0.5 mile into the Kaweah River (upstream of the Kaweah 2 Diversion Dam and within the SNP boundary).

2.2.2.4 Penstocks

Kaweah 1 Penstock

The Kaweah 1 Penstock is a 3,340-foot long buried steel pipe varying in diameter from 48 to 19 inches. Water from the forebay tank enters the penstock and is conveyed to the Kaweah 1 Powerhouse.

Kaweah 2 Penstock

The Kaweah 2 Penstock is a 1,012-foot long buried steel pipe varying in diameter from 60 to 34 inches. Water from the forebay enters the penstock and is conveyed to the Kaweah 2 Powerhouse.

Kaweah 3 Penstock

The Kaweah 3 Penstock is a 3,151-foot long buried steel pipe varying in diameter from 42 to 36 inches. Water from the forebay is released into a short steel pipe prior to flowing into the penstock. The penstock conveys water to the Kaweah 3 Powerhouse.

2.2.2.5 Powerhouses and Switchyards

Kaweah 1 Powerhouse and Switchyard

The Kaweah 1 Powerhouse contains a single-jet, single-overhung impulse turbine with an installed capacity of 2.25 MW. The maximum estimated hydraulic capacity of the Kaweah 1 Powerhouse is 24 cfs. The above-grade portion of the powerhouse includes an approximately 22.5-foot by 26.3-foot reinforced concrete structure. From the powerhouse, a short tailrace canal (approximately 4 feet) returns the diverted water to the Kaweah River.

The Kaweah 1 Switchyard is located adjacent to the powerhouse. A galvanized structural steel switchrack supports the 66 kilovolt (kV) bus bar.⁶ The switchyard also includes a transformer bank consisting of a single three phase, 3-mega volt amp (MVA), 39.9/64-2.4 kV, oil-air⁷ (OA), 60-hertz (Hz) transformer and other related components.

Kaweah 2 Powerhouse and Switchyard

The Kaweah 2 Powerhouse contains a single Francis-type turbine and electrical generator with an installed generating capacity of 1.8 MW. The maximum estimated hydraulic capacity of the Kaweah 2 Powerhouse is 82 cfs. The above-grade portion of the powerhouse includes an approximately 34-foot by 62-foot wood frame structure. From the powerhouse, a short tailrace canal (approximately 528 feet long) returns the diverted water to the Kaweah River.

The Kaweah 2 Switchyard is located adjacent to the powerhouse. A galvanized structural steel switchrack supports the 66 kV bus bar. The switchyard also includes a transformer bank consisting of a single three phase, 2.25 MVA, 39.8/69-2.3 kV, OA, 60 Hz transformer and other related components.

Kaweah 3 Powerhouse and Switchyard

The Kaweah 3 Powerhouse contains two single-jet, single-overhung impulse turbines with a combined installed generating capacity of 4.8 MW. The maximum estimated hydraulic capacity of the Kaweah 3 Powerhouse is 92 cfs. The above-grade portion of the powerhouse includes an approximately 52-foot by 52-foot concrete structure. From the powerhouse, a 75-foot tailrace canal returns the diverted water to the Kaweah River.

A switchyard is located adjacent to the powerhouse. A galvanized structural steel switchrack supports the 66 kV bus bar. The switchyard also includes a transformer bank consisting of four single phase, 1.25 MVA, 41.6/72-2.4 kV, OA, 60 Hz transformers and other related components. One of the four transformers serves as a spare.

2.2.2.6 Transmission, Power, and Communication Lines

There are three transmission lines associated with the Project—the primary line and two tap lines. The primary Project transmission line extends approximately 4.09 miles from the Kaweah 3 Powerhouse to the Three Rivers Substation. The primary transmission

⁶ In electrical power distribution, a busbar is a metallic strip or bar (typically copper, brass or aluminum) that conducts electricity within a switchboard, distribution board, substation, battery bank, or other electrical apparatus. Its main purpose is to conduct a substantial current of electricity, and not to function as a structural member.

⁷ Oil-Air, a cooling classification for transformers now classified as ONAN Oil type, natural convection flow through cooling equipment and in windings, and air external cooling medium.

line connects to the Kaweah 1 Switchyard via a 66-kV, 120-foot long tap line, and to the Kaweah 2 Switchyard via a 66-kV, 0.4-mile long tap line.

2.2.2.7 Gages

SCE currently maintains a network of gaging stations to monitor and record water flow. The following identifies Project gages by river reach and includes the corresponding U.S. Geological Survey (USGS) and SCE Gage Number and defines the purpose of the gage. Gages are located on the East Fork Kaweah River and Kaweah River.

Refer to Figure 2–3 for the location of these facilities. SCE maintains a contract with USGS to annually review Project gage streamflow records at USGS gages to satisfy license requirements. Table 2–1 provides a summary of Project gages.

2.2.2.8 Access Roads and Trails

Various roads and trails are used for routine operation and maintenance of the Project (Figures 3–2a to 3–2h and Table 2–14).

2.2.2.9 Ancillary and Support Facilities

Project ancillary and support facilities consist of office, maintenance, and storage buildings at the Kaweah 1 Powerhouse Campus; Kaweah 2 Powerhouse River Access Parking; wildlife bridges and escape ramps along Project flowlines; footbridges along Project flowlines; solar panels; satellite repeaters; gaging cableways; and fences.

2.2.3 Existing Project Maintenance

This section describes routine inspection and maintenance activities conducted at the Project. Routine inspections are conducted to verify the structural and/or functional integrity of the facilities, and to identify conditions that might disrupt operation or threaten public safety. A description of each activity is provided in the following subsections.

2.2.3.1 Maintenance Outage

SCE conducts annual maintenance outages at the Kaweah 1, 2, and 3 powerhouses, typically during low-flow periods (late summer/fall) when there is not enough water available for generation. The maintenance outages typically lasts up to 3 weeks. During the outages, SCE conducts mechanical and electrical inspections, and maintenance of Project powerhouse appurtenances. In conjunction with the maintenance outages, SCE makes repairs to Project diversions and flowlines, as appropriate.

In the event of an unplanned powerhouse outage (i.e., unit trips), water in the flowlines continues to flow (drain) into the forebays until the diversion is turned out (closed). Water entering the forebays can either be: (1) passed through the generating units at

the powerhouse (if operational); (2) released through the powerhouse bypass valve (if present); or (3) released from each forebay via Project spillways/spillway chutes that direct the overflow into natural channels for conveyance to the Kaweah River.

2.2.3.2 *Powerhouse Inspections and Maintenance*

SCE inspects all powerhouse appurtenances on a daily basis to ensure they are operating properly. Minor maintenance and repairs to powerhouse appurtenances, including the fences that surround the powerhouses and switchyards, are made on an as-needed basis.

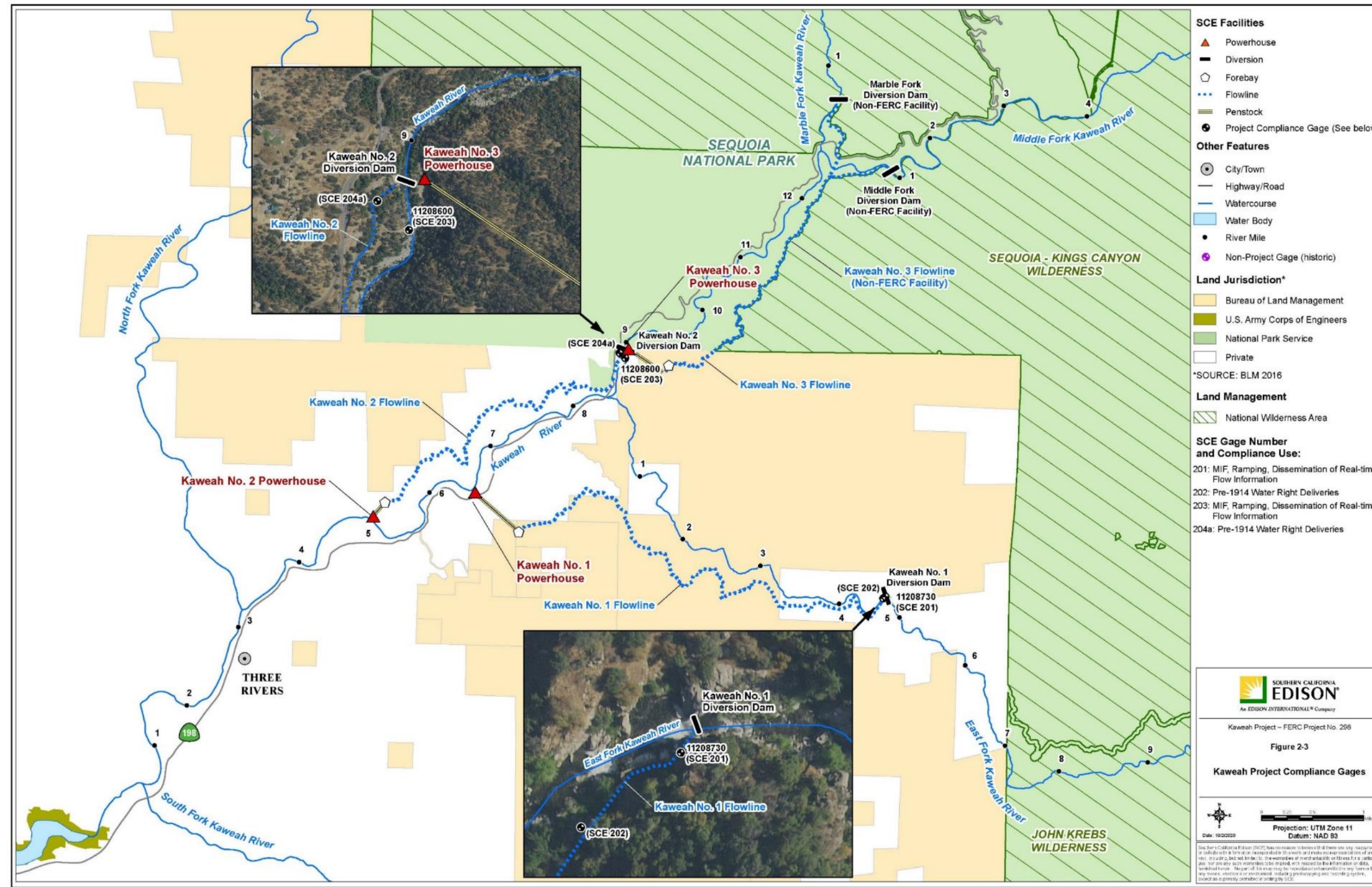


Figure 2-3. Kaweah Project Compliance Gages

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Table 2-1. Existing Gaging Stations

River	Gage	Gage Numbers	Gage Location
East Fork Kaweah River	Conduit 1 at Powerhouse	<ul style="list-style-type: none"> ● USGS Gage 11208800 ● SCE Gage 200a 	<ul style="list-style-type: none"> ● Located on the penstock to the Kaweah 1 Powerhouse that measures flow into the powerhouse.
East Fork Kaweah River	Near Three Rivers	<ul style="list-style-type: none"> ● USGS Gage 11208730 ● SCE Gage 201 	<ul style="list-style-type: none"> ● Located on the southwest bank of the East Fork Kaweah River that measures streamflow downstream of the Kaweah 1 Diversion Dam.
East Fork Kaweah River	Kaweah 1 MIF Release	<ul style="list-style-type: none"> ● SCE Gage 201a 	<ul style="list-style-type: none"> ● Located on a release pipe that comes out of the Kaweah 1 ● Sandbox and measures MIF releases.
East Fork Kaweah River	Conduit 1 near Three Rivers	<ul style="list-style-type: none"> ● SCE Gage 202 	<ul style="list-style-type: none"> ● Located just downstream from the Kaweah 1 Flowline intake that measures flow in the flowline.
Kaweah River	Below Conduit 2 near Hammond	<ul style="list-style-type: none"> ● USGS Gage 11208600 ● SCE Gage 203 	<ul style="list-style-type: none"> ● Located on the west bank of Kaweah River measures streamflow approximately 500 feet downstream of the Kaweah 2 Diversion Dam.
Kaweah River	Conduit 2 near Hammond	<ul style="list-style-type: none"> ● SCE Gage 204a 	<ul style="list-style-type: none"> ● Located on Kaweah Number 2 flowline that measures flow from Kaweah 2 intake into flowline.

River	Gage	Gage Numbers	Gage Location
Kaweah River	Conduit 2 at Powerhouse near Hammond	<ul style="list-style-type: none"> ● USGS Gage 11208818 ● SCE Gage 205a 	<ul style="list-style-type: none"> ● Located on the penstock to the Kaweah 2 Powerhouse that measures flow into the powerhouse.
Kaweah River	Middle Fork Kaweah Conduit 3 at Powerhouse near Hammond	<ul style="list-style-type: none"> ● USGS Gage 11208565 ● SCE Gage 206a 	<ul style="list-style-type: none"> ● Located on the penstock to the Kaweah 3 Powerhouse that measures flow into the powerhouse.

2.2.3.3 Flowline Inspections and Maintenance

SCE conducts physical structure inspections of all flowlines up to three times per year (spring, summer, and fall) and after large storm events. Operational inspections are completed monthly to look for leakage and debris build up (i.e., large woody debris and algae). Flowline maintenance and repairs are made on an as-needed basis.

2.2.3.4 Vegetation Management

Vegetation management is conducted under agreements (including Pesticide Use Proposals) with BLM and Tulare County. Vegetation management includes vegetation trimming by hand and herbicide use. In general, vegetation management activities occur during the spring and early summer to avoid work during periods of high fire danger. Vegetation management is implemented within the area necessary to provide access and protect Project facilities and provide for worker/public health and safety. A description of each vegetation management activity implemented for the Project is provided below.

Trimming by Hand

Vegetation trimming includes trimming of grasses and forbs with a weed eater; and trimming of shrubs and trees with a chain saw, other handheld saw, or pruners. These activities are implemented on an as-needed basis.

Herbicide Use

Herbicide use on BLM-owned lands historically has been conducted by SCE under Pesticide Use Proposal Number 2018-CA-160-1. The existing permit expired in 2020. SCE currently contracts with a third party for its ongoing herbicide use on BLM-owned lands.

Vegetation management on privately-owned land is conducted by SCE under Pesticide Use Proposal Number 5460929-2019-V1 with Tulare County. SCE currently contracts with third-parties for herbicide application on privately-owned lands.

Hazard Tree Removal

Hazard trees, generally defined as trees with defects that may cause a failure resulting in property damage, personal injury, or death, are removed on an as-needed basis. Removal is conducted with a chainsaw, handheld saw, or other equipment, as necessary.

Pest Management

Management of rodent populations at Project facilities is accomplished with the application of rodenticides. SCE contracts with a commercial pest control company to

apply rodenticide around the powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities. Use of rodenticides is conducted on an infrequent basis.

2.2.3.5 Sediment Management

SCE conducts sediment management activities at the Kaweah 1 Sandbox (flushing) and Forebay Tank (flushing and physical removal with equipment); Kaweah 2 Forebay (flushing and physical removal with equipment); and Kaweah 3 Forebay (physical removal with equipment). Each are briefly described below:

- **Kaweah 1 Intake.** The low-level outlet at the sandbox is routinely opened during high flows to flush sand and fine sediment into the active stream channel. If larger substrate becomes trapped in the sandbox, it is typically removed and placed back into the active channel during the fall maintenance outage. SCE estimates that sediment management activities at the Kaweah 1 Intake occur annually unless high-flow conditions require greater frequency.
- **Kaweah 1 Forebay Tank.** A low-level outlet in the forebay tank is routinely opened during normal operations to flush sand and fine sediment from the bottom of the tank into an adjacent natural channel. Any large material remaining in the bottom of the tank is removed during the fall maintenance outage. SCE estimates that sediment management activities at the Kaweah 1 Forebay Tank occur approximately every two years.
- **Kaweah 2 Forebay.** The forebay has several low-level outlets which are routinely opened during normal operations to flush small accumulation of sand and fine sediment from the bottom of the forebay into natural channels. Any large buildup of material is removed during the fall maintenance outage. SCE estimates that sediment management activities at the Kaweah 2 Forebay occur annually.
- **Kaweah 2 Intake.** During high-flow events, large boulders and rocks accumulate against the intake grate obstructing flow into the intake and allowing sediment to build up. This rock debris is occasionally removed to improve flow into the intake and prevent facility damage. SCE estimates that sediment management activities at the Kaweah 2 Intake occur approximately every 10 years.
- **Kaweah 3 Forebay.** The majority of the sediment removed in the forebay is composed of sand and silt. Prior to sediment removal, water in the forebay is lowered, first by passing water via the penstock through the Kaweah 3 Powerhouse. As the forebay water level approaches the elevation of the intake structure, diversion through the powerhouse is discontinued and the remainder of the water is released through the forebay's low-level outlet. Water released from the low-level outlet enters a short concrete chute. The chute discharges into an

adjacent natural channel that flows approximately 0.5 mile into the Kaweah River (upstream of the Kaweah 2 Diversion Dam). Sediment removal with heavy equipment occurs once the sediment in the bottom of the forebay dries. Most recently, in the summer of 2018, approximately 2,500 cubic yards of sediment was removed from the forebay. The forebay is located on lands managed by the BLM. SCE consults with BLM on the disposition of the material prior to initiation of sediment removal activities. SCE estimates that sediment management activities at the Kaweah 3 Forebay occur approximately every 5 years.

2.2.3.6 Road Maintenance

Project access roads are regularly inspected during normal activities. Minor repairs are conducted on an as-needed basis and major repairs are implemented annually during late summer/fall. Minor Project road maintenance generally includes the following types of activities: debris removal; basic repairs; repair, replacement, or installation of access control structures such as posts, cables, rails, gates, and barrier rock; and repair and replacement of signage. Major Project road maintenance generally includes the following types of activities: placement or replacement of culverts and other drainage features; bridge deck replacement; grading; sealing; resurfacing; and road replacement. Vegetation management may be conducted concurrently with road and trail maintenance on an as-needed basis.

2.2.3.7 Trail Maintenance

Project access trails are regularly inspected during normal Project activities. Repairs are conducted on an as-needed basis typically during late summer/fall. Trail maintenance generally includes the following types of activities: debris removal; basic repairs including minor brushing; maintenance of erosion control features such as water bars; repair, replacement, or installation of access control structures such as barrier rock; and repair and replacement of signage. Vegetation management may be conducted concurrently with trail maintenance on an as-needed basis.

2.2.3.8 Transmission, Power, and Communication Line Maintenance

Transmission, power, and communication line maintenance includes replacement of damaged poles on an as-needed basis. New poles are placed in, or immediately adjacent to previously existing holes, using line trucks. Vegetation management is also conducted along transmission, power, and communication line corridors, and at repeaters.

2.2.4 Existing Project Operation

The Project is operated consistent with existing regulatory requirements (existing FERC license articles and water rights) and operating and water delivery agreements to generate power for SCE customers and deliver consumptive water to local users. The following first describes operational constraints (regulatory requirements and operating and water delivery agreements) associated with the Project followed by a description of water management.

2.2.4.1 *Regulatory Requirements*

Regulatory requirements associated with operation of the Project currently include: (1) articles in the existing FERC License pertaining to MIF and ramping rates; and (2) stipulations in SCE’s existing water right claims.

Existing FERC License Articles

The MIF requirements, as specified in License Article 405 of the existing FERC License, for the bypass reaches⁸ are presented in Table 2–2.

Table 2–2. Minimum Instream Flow Requirements^{1, 2}

Month	Kaweah 1 Diversion Normal Year (cfs)	Kaweah 1 Diversion Dry Year (cfs)	Kaweah 2 Diversion Normal Year (cfs)	Kaweah 2 Diversion Dry Year (cfs)
October	5	5	11	5
November	5	5	11	5
December	5	5	11	5
January	5	5	20	10
February	5	5	20	10
March	10	10	30	20
April	10	10	30	30
May	10	10	30	30
June	10	10	30	30

⁸ A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach.

Month	Kaweah 1 Diversion Normal Year (cfs)	Kaweah 1 Diversion Dry Year (cfs)	Kaweah 2 Diversion Normal Year (cfs)	Kaweah 2 Diversion Dry Year (cfs)
July	10	10	20	10
August	5	5	20	10
September	5	5	11	5

Source: FERC License Article 405, as amended on April 20, 1994.

NOTES:

1. Runoff of Kaweah River at Terminus Reservoir for April 1 through July 31, for the current year, as estimated by the California Department of Water Resources (DWR) on or about May 1 of each such calendar year shall be used to distinguish between a normal water year and a dry water year for the purpose of this article. A "Normal Year" is defined as a forecasted runoff of greater than 172,000 ac-ft. A "Dry Year" is defined as a forecasted runoff of equal to or less than 172,000 ac-ft. The determination of either a normal water year or a dry water year shall then be used in maintaining the appropriate minimum flow release for the period May 10 of each calendar year through May 9 of the succeeding calendar year.
2. This flow schedule may be temporarily modified if required by operating emergencies beyond the control of SCE or for short periods on mutual agreement between SCE, the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife. If the flow is so modified, SCE shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

MIF release requirements at the Project diversions are based on water year type. In the existing FERC License, water year types for the Project are defined as either "Normal" or "Dry" based on the April 1 through July 1 forecast of runoff in the Kaweah River at Terminus Reservoir as published by the DWR in its May 1 forecast. A Dry Year is defined as a year when the forecast is equal to or less than 172,000 ac-ft of runoff. A Normal Year is defined as a year when the forecast is greater than 172,000 ac-ft of runoff. The MIF release schedules take effect on May 10 following the May 1 forecast and extend through May 9 of the following calendar year.

A summary of water year types from 1994 to 2018, based on the definition of Normal and Dry in the existing FERC license are provided in Table 2–3. This time period (1994 to 2018) is representative of recent runoff patterns and climatic conditions in the Kaweah River Watershed since issuance of the existing FERC license. Between 1994 and 2018, 68 percent of the years were classified as Normal and 32 percent were classified as Dry.

Table 2–3. Historic Water Year Types for the Kaweah River at Terminus Reservoir Based on Department of Water Resources Bulletin 120 May 1 Runoff Forecast (1994 to 2018)¹

Year	April through July Runoff Forecast (thousand acre-feet)	Water Year Type Classification²
1994	135	Dry
1995	500	Normal
1996	320	Normal
1997	320	Normal
1998	540	Normal
1999	160	Dry
2000	240	Normal
2001	190	Normal
2002	195	Normal
2003	225	Normal
2004	160	Dry
2005	380	Normal
2006	480	Normal
2007	95	Dry
2008	230	Normal
2009	195	Normal
2010	380	Normal
2011	490	Normal
2012	175	Normal
2013	83	Dry
2014	72	Dry
2015	38	Dry
2016	210	Normal

Year	April through July Runoff Forecast (thousand acre-feet)	Water Year Type Classification ²
2017	550	Normal
2018	165	Dry

1. Data obtained from: DWR Bulletin 120. Available at: cdec.water.ca.gov. Water Year Types for April 1 through July 1 Forecast of Runoff in the Kaweah River at Terminus Reservoir based on Bulletin 120 May 1 Forecast.
2. Pursuant to License Article 405, as amended on April 20, 1994, runoff of Kaweah River at Terminus Reservoir for April 1 through July 31, for the current year, as estimated by the California DWR on or about May 1 of each such calendar year shall be used to distinguish between a normal water year and a dry water year for the purpose of this article. A "Normal Year" is defined as a forecasted runoff of greater than 172,000 ac-ft. A "Dry Year" is defined as a forecasted runoff of equal to or less than 172,000 ac-ft.

In addition to MIF requirements, License Article 404 specifies that the "Licensee shall operate the project such that flows below Diversion Dams and Powerhouses Numbers 1 and 2 are not altered at a rate greater than 30 percent of the existing streamflow per hour" (i.e., ramping rates).

Water Rights

The water right claims described in this section are limited to SCE's rights associated with operation of the Project. Water rights held by other parties associated with delivery of consumptive water by SCE to local water users through the Kaweah 1 and Kaweah 2 flowlines are described in Section 2.2.4.2 Operating and Water Delivery Agreements.

Kaweah 1 Development

Water for the Kaweah 1 Development is diverted from the East Fork Kaweah River at the Kaweah 1 Diversion Dam and conveyed to the Kaweah 1 Powerhouse. The Kaweah 1 Development also utilizes water stored in four small reservoirs located on tributaries to the East Fork Kaweah River, upstream of the Kaweah 1 Diversion Dam within the SNP (see Figure 2-1). These reservoirs are operated under a SUP with the SNP and are not part of the FERC relicensing. However, the operation of these reservoirs influence the operation of the Kaweah 1 Powerhouse, which is under FERC jurisdiction. The following describes SCE's water rights associated with the Kaweah 1 Development.

DIRECT DIVERSION

Annually, SCE files a Statement of Diversion and Use with the State Water Board claiming a pre-1914 water right to divert 30 cfs of water from the East Fork Kaweah River for the purpose of hydroelectric power generation. The original statement was filed with the State Water Board on January 1, 1971, and is identified as S007760.

DIVERSION FOR STORAGE

SCE claims an appropriative right, acquired by actual use on public lands prior to 1914, to divert and store water in four reservoirs and to release the water from the reservoirs to better facilitate the timing of hydroelectric generation. The four reservoirs were constructed between 1903 and 1905 and are identified as Eagle Lake, Lady Franklin Lake, Crystal Lake, and Upper Monarch Lake (collectively referred to as the Mineral King Lakes).⁹ This is in addition to the direct diversion claims discussed previously.

Kaweah 2 Development

Water for the Kaweah 2 Development is diverted from the Kaweah River at the Kaweah 2 Diversion Dam and conveyed to the Kaweah 2 Powerhouse. SCE claims pre-1914 water rights for the direct diversion of water for power generation and incidental consumptive use of water at the powerhouse. The following describes SCE's water right claims associated with the Kaweah 2 Development.

DIRECT DIVERSION

Annually, SCE files a Statement of Diversion and Use claiming a pre-1914 right to divert 88 cfs of water from the Kaweah River for the purpose of hydroelectric generation. The original statement was filed with the State Water Board on January 1, 1971 and is identified as S007767.

Kaweah 3 Development

Water for the Kaweah 3 Development is diverted at two locations: (1) the Middle Fork Diversion Dam located on the Middle Fork Kaweah River; and (2) the Marble Fork Diversion Dam located on the Marble Fork Kaweah River. Both of these diversions are located within the SNP and are operated under a SUP and are, therefore, not part of FERC relicensing. However, these diversions directly influence the operation of the Kaweah 3 Powerhouse, which is under FERC jurisdiction. SCE claims water rights for the direct diversion of water for power generation in the Kaweah 3 Development and

⁹ Although the SUP does not specifically identify storage amounts in the Mineral King Lakes, the collective storage amount of the four reservoirs is 1,152 ac-ft.

incidental consumptive use of water at the powerhouse. The following describes SCE's water right claims associated with the Kaweah 3 Development.

DIRECT DIVERSION

Operation of the Kaweah 3 Development began on May 18, 1913 (SCE 2019, Volume 3, Exhibit E, Section 3.5). SCE files annual Statements of Diversion and Use with the State Water Board claiming pre-1914 water rights to divert 68 cfs of water from the Middle Fork Kaweah River and 90 cfs of water from the Marble Fork Kaweah River for the purpose of power generation. The original statements were filed with the State Water Board on January 1, 1971. The Middle Fork Diversion statement is identified as S007768 and the Marble Fork Diversion statement is identified as S007765.

2.2.4.2 Operating and Water Delivery Agreements

In addition to regulatory requirements, the Project operates consistent with existing water delivery agreements. Specifically, the Project is operated consistent with stipulations in: (1) the SUP issued by the NPS associated with the Kaweah 1 and Kaweah 3 developments; (2) water supply agreements between SCE and local water users associated with the delivery of consumptive water from the Kaweah 1 and Kaweah 2 flowlines; and (3) a water supply agreement between SCE and the California Division of Forestry (CDF) associated with the delivery of water to Hammond Fire Station from the Kaweah 1 Penstock. The following describes each of the operating and water delivery agreements.

National Park Service Special Use Permit

The Project makes use of several non-FERC facilities located in the SNP, including portions of the Kaweah 1 Development (Mineral King Lakes) and portions of the Kaweah 3 Development (upper flowline and diversions) (see Figure 2-1). All Project facilities located within the SNP are currently operated and maintained under a SUP (Permit Number PWR-SEKI-6000-2016-015) issued to SCE by the NPS. The current SUP expires on September 8, 2026.

The SUP contains MIF requirements below the Middle Fork and Marble Fork diversions as follows:

The minimum release of water into the Kaweah River at the diversion structures on the Marble Fork and the Middle Fork of the Kaweah River shall be either the natural stream flow or in accordance with the following schedule, whichever is less: January and February, 20 cubic feet per second (cfs), with distribution to be 6 cfs from Marble Fork and 14 cfs from Middle Fork; March through June, 30 cfs, with distribution to be 9 cfs from Marble Fork and 21 cfs from Middle Fork; July and through August, 20 cfs,

with distribution to be 6 cfs from Marble Fork and 14 cfs from Middle Fork; September through December, 11 cfs, with distribution to be 1.5 cfs from Marble Fork and 9.5 cfs from Middle Fork.

Although these MIF requirements are related to operation of non-FERC facilities, the requirements directly influence the amount of water available for generation at the Kaweah 3 Powerhouse (FERC Project facility). The SUP also allows for the storage of water in the Mineral King Lakes.¹⁰ Water stored in these reservoirs is used to meet instream flow requirements and/or augment generation at the Kaweah 1 Powerhouse during periods of low river flows.

Water Delivery Agreements

The Project is currently operated consistent with reservations made in various deeds and agreements that predate the FERC license (SCE 2020a). The water delivery agreements are summarized below by development.

Kaweah 1 Development

Agreement with Local Water Users

SCE maintains a continuous flow up to a maximum of 1 cfs in the Kaweah 1 Flowline to deliver water to local users consistent with existing agreements (SCE 2019, Volume 3, Exhibit E, Section 3.5). Consistent with these agreements, SCE delivers up to 2 miner's inches of water to local users via the Kaweah 1 Flowline. As shown in Figure 2–2f, water is delivered by SCE to local users at two delivery points along the Kaweah 1 Flowline, designated as WUD – Summit and WUD – Bear. SCE conveys water from the flowline through a short tap line to a valve/manifold. The short tap line and valve/manifold are not part of FERC relicensing. Local water users take delivery of the water at the valve/manifold.

History of Agreements

The License Application, Volume 3, Exhibit E, Section 3.5.2.2 states, the origin of these deliveries dates back to reservations made in a deed executed between Jacob and Mary Trauger and William Hammond on October 11, 1898, and recorded on February 9, 1899 (Vol. 89 of Deeds, Page 471). This deed transferred property located on the East Fork Kaweah River and associated water rights from the Trauger's to William Hammond. In 1900, the property and a portion of the water rights held by Hammond was subsequently conveyed to the Mount Whitney Power Company, then to the Mount Whitney Power and

¹⁰ Although the SUP does not specifically identify storage amounts in the Mineral King Lakes, the collective storage amount of the four reservoirs is 1,152 ac-ft.

Electric Company in 1909, and to SCE in 1920. As a condition of the original sale of the property and transfer of the water rights to Mount Whitney Power Company, Hammond retained the rights to two miner's inches¹¹ of water to be made available at any point along the Kaweah Number 1 Flowline (SCE 2019, Volume 3, Exhibit E, Section 3.5). The Mount Whitney Power Company and all subsequent owners of the Kaweah 1 Development (currently SCE) are required to deliver water from the Kaweah 1 Flowline consistent with the terms of the agreement. The original Trauger deed, including the associated water rights, was upheld in 1909 by the Superior Court of the County of Tulare in Lakeside Ditch Company vs. Mount Whitney Power Company (Lakeside Ditch Company v. Mt. Whitney Power Company, 1909).

Agreement with California Division of Forestry

In 1935, SCE agreed to deliver water to the CDF from the Kaweah 1 Flowline for domestic use at the Hammond Fire Station. Currently, water is delivered to the CDF Hammond Fire Station via a 0.75-inch pipeline tapping the Kaweah 1 Penstock and is approximately 600 feet long.

Kaweah 2 Development

Agreement with Local Water Users

SCE maintains a continuous flow up to a maximum of 3 cfs in the Kaweah 2 Flowline to deliver water to local users consistent with existing water supply agreements. Consistent with these agreements, SCE delivers up to 32 miner's inches of water to local users via the Kaweah 2 Flowline.

As shown in Figures 2–2a and 2–2b, water is delivered by SCE to local users at four delivery points along the Kaweah 2 Flowline, as follows:

- Flume 5 and Flume 6: 4.0 miner's inches
- Canal 9: 2.0 miner's inches
- Flume 14: 26 miner's inches

History of Agreements

The License Application, Volume 3, Exhibit E, Section 3.5.2.2 states, the origin of these deliveries dates back to reservations made in a deed between W.F. Dean and the Mount Whitney Power Company dated March 21, 1903, and recorded March 23, 1903 (Volume 111 of Deeds, Page 255). In this deed, Dean granted certain property and water rights to the Mount Whitney Power Company, including title and interest to an

¹¹ In Southern California, 1 miner's inch is equal to 0.020 cubic foot per second (cfs).

existing ditch referred to as the Lovelace and Dean Ditch. As specified in the deed, Dean reserved the right to: (1) 25 miner's inches of water from the Kaweah River; and (2) sufficient water to irrigate 12 acres of land located on the south side of the Kaweah River. It was later agreed with a Dean successor (I.E. Clark) that 7 miner inches, measured under a 4-inch pressure, was a sufficient supply for irrigation of 12 acres (see indenture dated December 3, 1934, and recorded May 23, 1945, Volume 1124 of Tulare County Official Records, page 226).

Over time, the rights to the 7 miner inches and 25 miner inches of water was conveyed to numerous parties. In 1934, after many years of costly and time consuming attempts to bypass sufficient water at the Kaweah 2 Flowline Intake, and to satisfy the complicating claims and demands of all the individuals holding various partitions of the Dean reservation, SCE entered into an agreement with the owners of the Dean reservation. This agreement provided that all but one of the water rights holders (Chester) would take their respective entitlements at Flume 14 where SCE would provide a flume tap and diversion facility to assure continuous delivery of 31 miner's inches of water in accordance with the individual rights. SCE concurrently agreed to provide 1 miner's inch of water to Chester via a tap located on Flume 12. This substantially reduced water losses due to seepage, evapotranspiration, and individual ditch diversion problems and provided a single central location for delivery and monitoring purposes. Subsequent amendatory agreements resulted in the removal of the tap on Flume 12 and the addition of three taps, one on Flume 5, one on Flume 6, and one on Canal 9. Today water is delivered to the local users by SCE through taps that provide a stable head over individually valved and calibrated orifices, thus assuring delivery of all, but no more than, the entitlement reserved under the 1903 Dean deed. The original Dean deed, including the associated water rights, was upheld in 1909 by the Superior Court of the County of Tulare in *Lakeside Ditch Company vs. Mount Whitney Power Company* (*Lakeside Ditch Company v. Mt. Whitney Power Company*, 1909).

2.2.4.3 Water Management

The Project is operated in a run-of-river mode. The Project diverts water from the East Fork Kaweah River at the Kaweah 1 Diversion Dam and from the Kaweah River at the Kaweah 2 Diversion Dam for power generation and to meet SCE's contractual obligations with water users. These diversions alter the volume of water in the rivers downstream of the Project diversions (bypass reaches), with minimal to no change in the annual seasonal flow pattern. The bypass reaches associated with the Project include:

- East Fork Kaweah River, from the Kaweah 1 Diversion to the confluence with the Kaweah River (4.7 miles); and

- Kaweah River, from the Kaweah 2 Diversion to the confluence of the Kaweah 2 Powerhouse Tailrace and the Kaweah River (4.1 miles).

The current amount and timing of flow diverted is a function of inflow (runoff), FERC License requirements for MIF and ramping rates, flowline and powerhouse capacities, water right claims, and the minimum flow needed to maintain sufficient head in the flowline to meet SCE's contractual water delivery obligations. Total annual inflow into the Project (combined inflow at the Kaweah 1 and 2 diversions) between water years 1994 to 2018 ranged from approximately 78,000 ac-ft (2015) to more than 668,000 ac-ft (2017). The median total annual inflow was approximately 229,000 ac-ft during this period.

The Kaweah 1 Flowline (East Fork Kaweah River) can divert up to 24 cfs, and the Kaweah 2 Flowline (Kaweah River) can divert up to 87 cfs. To maintain sufficient head pressure to meet SCE's contractual water delivery obligations along the flowlines, SCE maintains a continuous flow of 1 cfs in the Kaweah 1 Flowline and SCE maintains a continuous flow up to a maximum of 3 cfs in the Kaweah 2 Flowline to deliver water to local users consistent with existing water supply agreements. The flow is diverted from the flowline by water users. Water diverted into the flowlines at Project diversions for power generation passes through Project powerhouses generating electricity prior to returning to the Kaweah River downstream of Project tailraces.

SCE typically diverts water throughout the year in normal water years (e.g., when runoff of Kaweah River at Terminus Reservoir is greater than 300,000 ac-ft between April 1 and July 1), peaking in the winter, spring, and early summer months. In dry water years (e.g., when runoff of Kaweah River at Terminus Reservoir is less than 300,000 ac-ft between April 1 and July 1), low summer and winter flows (e.g., August to January) typically preclude diversion for generation and diversions for generation only occur in spring/early summer.

Water Management Obligations

SCE currently has two competing needs (demands) associated with operation of the Kaweah Project. These obligations include providing: (1) MIF releases consistent with the flow schedule in FERC License Article 405, including conditions required by agencies during approved temporary variances; and (2) domestic water to local users through the Project flowlines based on SCE's water delivery contractual obligations. SCE maintains a continuous flow of 1 cfs from the Kaweah 1 Diversion and 3 cfs from the Kaweah 2 Diversion to meet SCE's contractual obligations to local water users. During low runoff periods, consumptive water is diverted and delivered to local water users, but no water is diverted for generation purposes.

Historically, SCE has requested and obtained approval from resource agencies (California Department of Fish and Wildlife [CDFW] and U.S. Fish and Wildlife Service

[USFWS]) to temporarily modify (reduce) MIF releases below the Kaweah 1 Diversion and Kaweah 2 Diversion when projected inflows were approaching the combined flow necessary to meet both water supply and MIF release requirements. These “short periods”¹² of temporary flow modifications were necessary to ensure that SCE could comply with the license conditions based on uncertainty in actual runoff (magnitude and/or timing). SCE obtained agency approval for temporary modifications of MIFs below the Kaweah 1 Diversion in 4 Dry years and below Kaweah 2 Diversion in 8 years (4 Dry years and 4 Normal years) (see Table 2–3).

Although, SCE obtained agency approval for temporary modifications of MIFs when inflows were projected to not meet both the MIF requirements and the water supply commitments, the approved reductions in MIF were only implemented at the Kaweah 2 Diversion in 2002, 2012, 2015, and most recently in 2016 (FERC 2016). In its 2016 approval, FERC noted the USFWS and CDFW concurred with the proposed variance, provided SCE implement the following conditions:

- Divert the minimum amount necessary for water rights;
- Not operate the Kaweah 2 powerhouse during the variance;
- Provide a hydrograph of daily minimum flows below the Kaweah 2 diversion dam by January 31, 2017;
- Report flows less than 5 cfs below the diversion within 3 working days; and
- Install a temperature sensor below the diversion point and include the collected data in its final summary report.

During years when temporary modifications were obtained but not implemented, inflows were sufficient to meet both the MIF requirements and the water supply commitments. In the East Fork Kaweah River, stream flows were sufficient to meet both the MIF requirements and the water supply commitments in all years despite requests for flow modifications based on projected inflow.

Required instream flows and contractual water deliveries have been maintained in the East Fork, and maintained over 99 percent of the time in the Kaweah River. There were four instances over the 18-year flow record where SCE’s water delivery obligations resulted in flows being reduced below MIFs by an average of 10 percent or less for an average duration of 11 days per occurrence (SCE 2021).

¹² As referenced in an SCE letter to FERC (SCE 2017), in 2007, FERC staff informed SCE that the term “short periods” generally means up to three weeks (letter from George H. Taylor (FERC) to Russ Krieger (SCE), November 14, 2007).

2.2.5 Project Generation and Outflow Records

The timing and number of hours of generation in a given year is a function of inflow, FERC License requirements for MIF and ramping rates, flowline and powerhouse capacities, water right claims, and the minimum flow required to maintain sufficient head in the flowline to meet water delivery contractual obligations.

Between 1992 and 2018, all Project powerhouses experienced periods of no generation. Lack of generation at a powerhouse is generally the result of: (1) routine maintenance outage; (2) outages caused by the powerhouse tripping; (3) facility repairs necessitating a powerhouse be offline; or (4) periods of low runoff when SCE is required to meet contractual water deliveries to local water users and there is not enough water remaining for generation. From 1992 to 2018, annual generation ranged from 14,762 megawatt hours (MWh) (2014) to 60,725 MWh (1998). The Project's annual average generation is 39,124 MWh. The estimated dependable generating capacity of the Project by calendar year is 14,762 MWh based on generation records from 2014.

2.2.6 Existing Project Environmental Measures

SCE currently implements several environmental measures, and management and monitoring plans to minimize potential environmental impacts resulting from Project operation and maintenance. These are summarized below.

2.2.6.1 Water Resources

Ramping Requirements

SCE meets ramping rate requirements downstream of diversion dams and the Kaweah 1 and 2 powerhouses in accordance with FERC License Article 404, as described below.

ARTICLE 404. SCE shall operate the project such that flows below Diversion Dams and Powerhouses Nos. 1 and 2 are not altered at a rate greater than 30 percent of the existing streamflow per hour.

SCE files an annual report with FERC documenting compliance with ramping requirements by April 1 of each year.

MIF Requirements

SCE provides MIF releases in accordance with FERC License Article 405, as amended. License Article 405 was amended on April 20, 1994 to include a definition for dry and normal years, and to clarify minimum flow requirements for May that were previously omitted (see Table 2–2). SCE files an annual report with FERC documenting compliance with MIF requirements by April 1 of each year.

Erosion Protection and Remediation Plan

License Article 401 approved the Erosion Protection and Remediation Plan prepared by SCE for the Project (SCE 1992a). The plan was subsequently revised and FERC approved the revised plan in an Order issued January 19, 1993. The plan required the implementation of erosion protection and remediation measures along Kaweah 1 Flowline and Project access roads. In addition, the plan includes erosion protection measures that SCE is required to implement in the event of a future flowline break.

Stream Gaging Plan

As required by License Article 407, SCE prepared a Stream Gaging Plan that detailed installation, operation, and maintenance of stream gages in the East Fork Kaweah River and the mainstem Kaweah River. The stream gaging network was designed to be capable of effectively monitoring the requirements of License Articles 404 (ramping rates) and 405 (MIF). SCE submits annual reports to FERC documenting compliance using the data obtained from Project gages in accordance with the Stream Gaging Plan. In addition, should a violation associated with License Articles 404 or 405 occur, SCE is required to file a report with FERC detailing the nature of the violation and any measures implemented to correct the violation.

2.2.6.2 Cultural Resources

Cultural Resources Management Plan

As required by License Article 414, SCE prepared a Cultural Resources Management Plan (CRMP) (SCE 1992b) that identifies specific measures that SCE undertakes to avoid adverse impacts to four National Register of Historic Places (NRHP) eligible properties located within the FERC Project boundary, including three archaeological sites associated with Project transmission lines and contributing elements of the Kaweah 3 Historic District.

The CRMP identifies various programmatic measures that SCE is required to implement, as well as resource monitoring and recordation. The CRMP states that if impacts to NRHP-eligible properties cannot be avoided with implementation of protective and avoidance measures, SCE, in consultation with State Historic Preservation Officer (SHPO) and FERC, would develop a site-specific treatment plan in accordance with 36 CFR Part 800.4-800.6. Resource monitoring and recordation is required to occur in three-year increments to determine the success of current measures and to evaluate the need for additional treatment.

Ground-disturbing Activities Consultation

In accordance with License Article 415, prior to any land-clearing, land-disturbing, or spoil-producing activities associated with the Project, SCE is required to consult with the SHPO and FERC. In addition, SCE is required to conduct a cultural resource survey of the affected area and file a survey report and a CRMP should any significant archaeological or historic resource be identified.

2.2.6.3 Terrestrial Resources

Wildlife Protection and Monitoring

As required by License Article 408, SCE implemented measures to minimize wildlife drowning in the Kaweah 2 Flowline. The measures ranged from the installation of hazers and flashers at existing escape ramps to the replacement of existing bridges. Required improvements were implemented between 1992 and 1996.

As required by License Article 409, SCE developed a plan to protect deer and other wildlife from drowning in the Kaweah 3 Flowline. The plan included widening existing foot and wildlife bridges, moving existing footbridges, converting footbridges to wildlife bridges, constructing new wildlife bridges, and a plan for improving and maintaining the facilities. These improvements were implemented between 1994 and 1996.

In accordance with License Article 410, SCE conducts monitoring to determine whether the measures implemented at Kaweah 2 and 3 flowlines were successful in minimizing wildlife drownings, and to inspect wildlife protection facilities to determine any required maintenance/upgrade actions. SCE files an annual report with FERC that documents mortality and observed wildlife use on or near the bridges.

Avian Mortality Reporting Plan

As required by License Article 412, SCE developed the Avian Mortality Reporting Plan that includes methods for monitoring Project transmission lines for injury or electrocution of raptors and other birds. SCE files a report with FERC every 5 years that documents monitoring results.

2.2.6.4 Land Management

Land Clearance Requirements

In accordance with License Article 203, SCE keeps all lands along open flowlines clear to an adequate width and disposes of all temporary structures. This includes removal of unused timber, hazard trees, brush, refuse, or other material unnecessary for the purpose of the Project. All clearing of lands and disposal of unnecessary material is

conducted in accordance with appropriate federal, state, and local statutes and regulations.

2.2.7 Other SCE Company-wide Environmental Programs

In addition to the above License Articles, the following programs are also implemented for the Kaweah Project.

2.2.7.1 *Environmental Training Program*

Kaweah Project personnel receive annual environmental awareness training on an as-needed basis. Annual training covers avian protection, nesting birds, special-status species, and cultural resources, and includes information on recognizing biological and cultural sensitivities, avoiding impacts to resources, and contact information for engaging SCE's Environmental Services Department for support. Project-specific trainings may be conducted in the field as tailboards on an activity-specific basis to review appropriate avoidance and resource protection measures in environmentally sensitive areas. This environmental program is administered under SCE's corporate-wide Environmental Awareness Training Program.

2.2.7.2 *Transmission, Power, and Communication Line Maintenance Program*

Project transmission, power, and communication line poles that require maintenance are evaluated for compliance with the Avian Power Line Interaction Committee (APLIC) Guidelines. Depending on the results of the evaluation, SCE either retrofits with raptor-safe equipment or replaces with a raptor-safe pole configuration. Raptor-safe powerline design configurations described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* are used when replacing existing towers, poles, phase conductors, and associated equipment. This program is administered under SCE's corporate-wide Avian Protection Program.

2.2.8 Project Safety

2.2.8.1 *Part 12 Dam Safety Inspections*

The existing Project dams are classified as a "low hazard" since no reasonably foreseeable project emergency would endanger life, health, or property. Accordingly, the Project is exempt from the Independent Consultants Dam Safety Inspection that is typically required under the 18 CFR Part 12, Subpart D (SCE 2020b). However, over the term of the existing license, SCE has participated in FERC dam safety and environmental inspections. Any subsequent FERC directives and items identified during these inspections as requiring attention were timely addressed by SCE and written documentation filed with FERC.

Pursuant to 18 CFR § 12.20(a), FERC requires licensees to develop and file an Emergency Action Plan (EAP) with the Regional Engineer, unless granted a written exemption in accordance with § 12.21(a) of the regulations. To date, FERC has agreed with SCE's annual requests and determined that an EAP is not required for the Project (per 18 CFR § 12.21(c)(2)). In its annual correspondence, FERC stated it will not respond to future annual EAP exemption requests unless there are comments on the EAP or find that the submittal does not satisfy requirements (FERC 2020). If there are any changes to the Project that might cause an emergency endangering life, health, or property, SCE would notify FERC to determine the necessity to prepare an EAP.

2.2.8.2 Project Safety Features

SCE maintains several features aimed at protecting public health and safety, and wildlife, including:

- **Signage:** SCE utilizes signage to warn the public of hazardous areas and potentially dangerous conditions. For example, danger and warning signs are located near facilities that may pose a danger to the public (e.g., flowlines, powerhouses, and switchyards).
- **Physical Restraining Devices:** SCE uses various devices to restrict public access to hazardous areas, including:
 - Fences around powerhouses, switchyards, forebays, and select flowline features;
 - Gates limiting access onto Project facilities; and
 - Grates and debris catchers on intake structures.
- **Flowline Safety Features:** SCE has installed various features to allow people and wildlife to safely cross the flowline and other features that provide a mechanism for escape, should a person or animal fall into the water. These features are briefly described below.
 - *Footbridges and Crossings:* Footbridges and wildlife crossings are present at various intervals along the Kaweah 2 and Kaweah 3 flowlines to allow SCE personnel and wildlife to cross safely. The footbridges include signage that they are to be used by SCE personnel only and the public is cautioned to keep off.
 - *Escape Features:* SCE installed various features to reduce wildlife mortality (drownings) in the Kaweah 2 and Kaweah 3 flowlines. These include: escape ramps; escape fencing (chain link fencing attached to the side of the flowline); and flashers/hazers. While these features are intended for use by wildlife,

they also provide a mechanism for the public and SCE personnel to exit the flowline in the event of an accidental fall into the water.

- *Handrails*: Hand rails are installed in elevated areas, including along bridges and flowline walkways. These features protect the health and safety of SCE employees and subcontractors who operate and maintain the Project facilities.
- *River Safety Measures*: A horizontal safety cable is strung across the Kaweah River, just upstream of the Kaweah 2 intake facility. This cable is intended to function as a grab line to facilitate exiting the river prior to the Kaweah 2 Diversion Dam.

2.3 Proposed Project

2.3.1 Overview

Through the submittal of its FERC License Application, SCE is requesting renewal of its current license for the Project for a term of 50 years. The Proposed Project under CEQA includes the continuation of existing operation and maintenance activities, and proposed license changes, as described below.

In addition, the United States Department of Interior, Bureau of Land Management (BLM) pursuant to Section 4(e) of the FPA, and the NPS pursuant to Section 10(a) of the FPA submitted preliminary conditions and recommendations, respectively, to FERC for its consideration. The requested conditions generally include:

- Consultation specific to BLM;
- Annual BLM employee training;
- Develop and implement a Historic Properties Management Plan (HPMP);¹³
- Maintain and share maintenance costs of portions of Craig Ranch/Salt Creek Road;¹⁴

¹³ The HPMP was finalized in June 2020.

¹⁴ For discussion purposes, it is assumed that maintenance associated with Craig Ranch/Salt Creek Road would be incorporated into the proposed Project Road and Trail Management Plan.

- Provide exclusionary cattle fencing and water trough near the Kaweah 2 Flowline as part of the Proposed Project;¹⁵ and
- Implement several “Administrative Conditions”.

At this time, the conditions have not been finalized by FERC and therefore, discussion of BLM Section 4(e) conditions is provided for informational purposes. Similarly, the NPS 10(a) recommendations have not been approved by FERC. The NPS 10(a) recommendations generally include:

- Provide real time flow information to better inform whitewater boaters to plan safely; and
- Provide public recreational access at Powerhouses 1, 2 and 3.

Since the 10(a) requests are recommendations only, they are not discussed in this document as a potential change to the Proposed Project. The Proposed Project does not include new facilities that require construction activities. However, SCE may be required by FERC to comply with BLM’s preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final Technical Study Report). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, the fencing and water trough would become new Project facilities.

The Proposed Project would continue to operate in run-of-river mode using existing facilities, as described above, and continue to generate power for SCE customers and deliver water per SCE’s contractual obligations (refer to Section 2.2.4.2). In summary, the following modifications to the existing license are proposed (detailed descriptions follow):

- Modification to Existing Project Operations;
- New and Modified Environmental measures, Management and Monitoring Plans;
- Modification to the Existing FERC Project Boundary;

¹⁵ BLM fencing would be built along the north side of the Kaweah 2 Flowline from the Kaweah 2 Forebay easterly to connect with the existing fencing that runs northerly from near Kaweah 2 Flume segment 6.5. Fencing would be built with a buffer of at least 10 feet from the northern edges of the Kaweah 2 Flowline. As stated in the License Application, Volume 3, Supporting Document A, LAND 3 – Land Use Technical Study Report, SCE has indicated the request for cattle fencing is not within the FERC Project boundary and considered “non-project” fencing.

- Project Facility Enhancements; and
- Additional Project Maintenance Activities.

2.3.2 Proposed Project Purpose and Objectives

The overall purpose of the Proposed Project is to allow continued operation and maintenance of SCE's existing Project under a new FERC license. Specific objectives related to this purpose are:

1. Meet Current Demand for Energy in Service Area. SCE is a publicly regulated utility that supplies electricity to approximately 15 million people in a 50,000-square-mile service area covering portions of coastal, central, and southern California. The Proposed Project would continue to operate and generate power for SCE customers and deliver water users consistent with SCE's contractual obligations.
2. Meet Renewable Energy Goals. In 2002, the state of California established its Renewables Portfolio Standard (RPS) program, which requires that a specific percentage of electricity retail sales must come from renewable energy resources, which include hydroelectric facilities. The Proposed Project would contribute to California's efforts to meet its RPS requirements by producing a total installed capacity of 8.85 MW, with an annual average of 39,124 MWh.¹⁶
3. Provide a Source of Energy with Low Greenhouse Gas Emissions. Renewable energy generated by the Project displaces energy that may otherwise be generated by gas-fired units, which are a substantial source of greenhouse gas emissions.

2.3.3 Proposed Modifications to Existing Operations

2.3.3.1 *Proposed MIFs and Ramping Rates*

Under the Proposed Project, operations would continue in a run-of-river mode generally consistent with water management practices described above. However, MIFs and ramping rates would be modified under the Proposed Project, which would change Project operations, as follows.

¹⁶ Average annual generation calculated from SCE power generation records at all three Project powerhouses from 1992–2018.

MIF

Under the Proposed Project, MIF would be increased in select months and water years to enhance habitat for aquatic species and better simulate a more natural hydrograph. In addition, SCE proposed a prioritization of water deliveries from the Project flowlines to local water users consistent with its contractual obligations, when Project inflows cannot meet the combined flow necessary to meet both water supply deliveries and MIF releases below Project diversions.

Ramping Rates

Under the Proposed Project, the ramping rate for instream flows would not decrease at a rate (cubic feet per second per hour [cfs/hr]) greater than 30 percent of existing streamflow per hour (down ramping). There is not an up-ramping rate requirement; however, as a natural consequence of the maximum capacity of the diversion (24 cfs), up ramping would not increase greater than 24 cfs per hour. The ramping rate for instream flows downstream of the Kaweah 2 Diversion (as a result of diversion changes) would not decrease at a rate greater than 30 percent of existing streamflow per hour (down ramping) or increase greater than 25 cfs per hour when the existing streamflow is <40 cfs. There is not an up-ramping rate requirement when the streamflow is ≥40 cfs, however; as a natural consequence of the maximum capacity of the diversion (87 cfs), ramping would not increase greater than 87 cfs per hour when the existing streamflow is ≥40 cfs.

2.3.4 Proposed Project Generation

Generation under the Proposed Project would be reduced by 6.0 percent at the Kaweah 1 Powerhouse and 0.8 percent at the Kaweah 2 Powerhouse, as a result of implementation of the new MIF measure. The instream flow measure affects generation at the Kaweah 1 and 2 Powerhouses only (Table 2–4). Under the existing Project, the annual average generation is (1992 to 2018) is 39,124 MWh. Under the Proposed Project, the annual average generation would be 38,460 MWh (a reduction of 664 MWh).

Table 2–4. Proposed Project Generation Changes

Year	Net Generation (MWh) Kaweah 1 Powerhouse	Net Generation (MWh) Kaweah 2 Powerhouse	Net Generation (MWh) Kaweah 3 Powerhouse	Net Generation (MWh) Proposed Project Total
Existing Average Annual Generation (1992 to 2018)	9,732	10,236	19,156	39,124
Proposed Project Average Annual Generation	9,149	10,155	19,156	38,460
Generation Loss	-583 (6.0 percent)	-81 (0.8 percent)	0 (0 percent)	-664 (1.7 percent)

Source: SCE 2019, Volume 3, Exhibit E, Section 4.4

2.3.5 Proposed New and Modified Environmental Measures, Management and Monitoring Plans

As stated in SCE’s License Application, SCE proposes to continue implementing existing FERC required environmental measures, management and monitoring plans required to meet license articles and associated orders that are ongoing and considered as routine operation and maintenance of the Project. In addition, several modifications are proposed to existing measures and plans, as well as new environmental measures and plans designed to protect, maintain, or enhance environmental and cultural resources over the term of the new license.

Table 2–5 summarizes which existing measures and plans would be modified, new measures and plans, and existing measures and plans that would not be modified. A description of each modified measure and plan are provided in the next section.

Table 2–5. Summary of Proposed Changes to SCE Environmental Measures and Plans

Proposed Changes to SCE Environmental Measures and Plans
<i>Existing Environmental Measures and Plans with Proposed Modification</i>
Aquatic Resources:
<ul style="list-style-type: none"> • Instream Flow Measures
<ul style="list-style-type: none"> • Stream Gaging Monitoring Plan
Cultural Resources
<ul style="list-style-type: none"> • Historic Properties Management Plan (HPMP)
Land Resources
<ul style="list-style-type: none"> • Project Road and Trail Management Plan
Terrestrial Resources
<ul style="list-style-type: none"> • Vegetation and Integrated Pest Management Plan
<i>Proposed New Environmental Measures and Plans</i>
Aquatic Resources
<ul style="list-style-type: none"> • Fish Population Monitoring Plan
<ul style="list-style-type: none"> • Entrainment Study Measure
<ul style="list-style-type: none"> • Water Temperature Monitoring Plan
<ul style="list-style-type: none"> • Water Quality Monitoring Plan
Recreation Resources
<ul style="list-style-type: none"> • Recreation Enhancement Measures
Terrestrial Resources
<ul style="list-style-type: none"> • Special-status Plant Protection and Monitoring Plan
<i>No Proposed Modifications</i>
Aquatic Resources
<ul style="list-style-type: none"> • Sediment Management and Erosion Control Plan
Terrestrial Resources
<ul style="list-style-type: none"> • Special-Status Bat Protection Measure
<ul style="list-style-type: none"> • Avian Mortality Monitoring Plan

Proposed Changes to SCE Environmental Measures and Plans
<ul style="list-style-type: none"> • Wildlife Mortality Monitoring Plan
<ul style="list-style-type: none"> • Transmission, Power, and Communication Line Maintenance Measure
Environmental Training Program
<ul style="list-style-type: none"> • Project Safety

2.3.5.1 Aquatic Resources

Proposed Project Instream Flow Measures

MIF

Water Year Types

MIF requirements are specified for two different water year type classifications – Dry and Normal. The water year type classifications are based on forecasted unimpaired runoff in the Kaweah River below Terminus Reservoir from April 1 through July 31, for the current year, as estimated by the DWR Bulletin 120 on or about May 1 of each such calendar year. The water year types and associated unimpaired flow thresholds in acre feet are provided below:

Water Year Type	Forecasted Unimpaired Runoff Thresholds Kaweah River below Terminus Reservoir (acre-feet)
Normal	> 172,000
Dry	≤ 172,000

MIF Schedules

Kaweah River Downstream of the Kaweah 2 Diversion Dam

The Proposed Project would maintain MIF in the Kaweah River downstream of the Kaweah 2 Diversion Dam as specified in Table 2–6, based on month and water year type. MIF is proposed to be measured at U.S. Geological Survey (USGS) Gage Number 11208600, Kaweah River below Conduit 2 near Hammond, California¹⁷. In the event that natural inflow into the Kaweah 2 Diversion Pool is insufficient to meet both the

¹⁷ Refer to the Stream Gaging Monitoring Plan for a complete description of gages to be used for compliance.

enumerated MIF releases in Table 2–6 and the necessary flow (3 cfs) for SCE’s contractual water delivery obligations¹⁸ into the Kaweah 2 Flowline, SCE proposed that the MIF release requirement would be reduced to natural inflow minus 3 cfs. If this occurs, SCE would not generate power at the Kaweah 2 Powerhouse during the period that scheduled flows are modified and SCE Gage 204a (Kaweah River Conduit 2 near Hammond, California) would be used to measure that no more than 3 cfs is diverted into the Kaweah 2 Flowline.

Table 2–6. MIF by Water Year Type – Kaweah River Downstream of Kaweah 2 Diversion Dam

Month	MIF by Water Year Type Dry	MIF by Water Year Type Normal
January	20 or (NF-3 cfs)	20 or (NF-3 cfs)
February	20 or (NF-3 cfs)	20 or (NF-3 cfs)
March	20 or (NF-3 cfs)	30 or (NF-3 cfs)
April	30 or (NF-3 cfs)	30 or (NF-3 cfs)
May	30 or (NF-3 cfs)	30 or (NF-3 cfs)
June	30 or (NF-3 cfs)	30 or (NF-3 cfs)
July	20 or (NF-3 cfs)	20 or (NF-3 cfs)
August	10 or (NF-3 cfs)	20 or (NF-3 cfs)
September	5 or (NF-3 cfs)	20 or (NF-3 cfs)
October	5 or (NF-3 cfs)	11 or (NF-3 cfs)
November	5 or (NF-3 cfs)	11 or (NF-3 cfs)
December	10 or (NF-3 cfs)	11 or (NF-3 cfs)

NOTES: (NF-3 cfs) = Natural flow to the Kaweah 2 Diversion Pool minus SCE’s contractual water delivery obligation 3 cfs. To maintain sufficient head pressure to meet SCE’s contractual water delivery obligation along the flowlines, SCE maintains a continuous flow up to a maximum of 3 cfs in the Kaweah 2 Flowline to deliver water to local users consistent with existing water supply agreements. The actual contracted water amounts are provided in Section 2.2.2, Existing Project Facilities, and measured in miner’s inches.

¹⁸ Details of SCE’s contractual water delivery obligations are provided in Section 3.5 of the License Application.

East Fork Kaweah River Downstream of the Kaweah 1 Diversion Dam

The Proposed Project would maintain MIF in the East Fork Kaweah River downstream of the Kaweah 1 Diversion Dam as specified in Table 2–7, based on month and water year type. MIF would be measured at USGS Gage 11208730, East Fork Kaweah River near Three Rivers, California. In the event that natural inflow into the Kaweah 1 Diversion Pool is insufficient to meet both the enumerated MIF releases in Table 2–7 and the necessary flow (1 cfs) for SCE’s contracted water delivery obligations (1 cfs) into the Kaweah 1 Flowline, SCE proposed that the MIF release requirement would be reduced to natural inflow minus 1 cfs. If this occurs, SCE would not generate power at the Kaweah 1 Powerhouse during the period that scheduled flows are modified and SCE Gage Number 202 (East Fork Kaweah River Conduit 1 near Three Rivers, California) would be used to measure that no more than 1 cfs is diverted into the Kaweah 1 Flowline.

Table 2–7. MIF by Water Year Type – East Fork of Kaweah River Downstream of Kaweah 1 Diversion Dam

Month	MIF by Water Year Type Dry	MIF by Water Year Type Normal
January	5 or (NF–1 cfs)	10 or (NF–1 cfs)
February	5 or (NF–1 cfs)	10 or (NF–1 cfs)
March	10 or (NF–1 cfs)	20 or (NF–1 cfs)
April	10 or (NF–1 cfs)	20 or (NF–1 cfs)
May	10 or (NF–1 cfs)	20 or (NF–1 cfs)
June	10 or (NF–1 cfs)	20 or (NF–1 cfs)
July	10 or (NF–1 cfs)	20 or (NF–1 cfs)
August	5 or (NF–1 cfs)	20 or (NF–1 cfs)
September	5 or (NF–1 cfs)	20 or (NF–1 cfs)
October	5 or (NF–1 cfs)	10 or (NF–1 cfs)
November	5 or (NF–1 cfs)	10 or (NF–1 cfs)
December	5 or (NF–1 cfs)	10 or (NF–1 cfs)

NOTES: (NF–1 cfs) = Natural flow to the Kaweah 1 Diversion Pool minus SCE’s contractual water delivery obligation of 1 cfs. To maintain sufficient head pressure to meet SCE’s contractual water delivery obligations along the flowlines, SCE maintains a continuous flow of 1 cfs in the Kaweah 1 Flowline to deliver water to local users consistent with existing water supply agreements. The actual contracted water amounts are provided in Section 2.2.2, Existing Project Facilities, and measured in miner’s inches.

MIF Compliance

As specified in the License Application, the Proposed Project would comply with the MIF schedules meeting the following conditions:

- Provide the MIF releases within 30 days of License issuance.
- Determine the water year type, either a Normal or Dry water year, and the water year type shall then be used in maintaining the appropriate MIF release schedule for the period May 10 of each calendar year through May 9 of the succeeding calendar year.
- All specified MIFs are in cubic feet per second (cfs).
- MIFs must be released on the date specified in the MIF schedule for each location unless access to release facility is prohibited by hazardous conditions (risk to operator safety). If this occurs, the Federal Energy Regulatory Commission (FERC), State Water Board, and CDFW must be notified of the circumstances as soon as possible, but no later than 3 business days after such incident. Further, the MIFs must be released as soon as practicable.
- The MIF release would be based on daily and hourly average flow measurements (based on flow measured in ≤ 15 -minute time increments). The daily average flow would never be less than the thresholds specified in the MIF schedule for each location and the hourly average flow would never be less than 80 percent of the thresholds specified in the MIF schedule for each location, except as authorized in the following:
 - The MIF may be temporarily modified for short periods (up to 14 days) upon mutual agreement between SCE, State Water Board, and CDFW with notification to FERC.
 - The flow schedule may be temporarily modified if required by operating emergencies or equipment failures beyond the control of SCE. If the flow is so modified, SCE would notify the FERC, State Water Board, and CDFW, as soon as possible, but no later than 10 business days from when the temporary flow modification began.
- In the event that natural inflow into the Kaweah 1 Diversion Pool or Kaweah 2 Diversion Pool is insufficient to meet both the enumerated MIF releases and SCE's water delivery obligations, the daily average flow into the respective flowlines would never be greater than 1 cfs in the Kaweah 1 Flowline and 3 cfs in the Kaweah 2 Flowline as specified in the instream flow schedule for each location. The hourly average flow would never be greater than 120 percent of SCE's water delivery obligation for each location.

- If a deviation occurs regarding compliance with MIF, SCE would file a report with the State Water Board and FERC within 30 days from the date that the data becomes available indicating the deviation. The report would, to the extent possible, identify the cause, severity, and duration of the deviation, any environmental impacts resulting from the deviation, a description of the measures implemented to correct the deviation, and the measures SCE implemented or proposed to ensure deviations do not reoccur. The associated gaging data from the Proposed Project would be available to the resource agencies within 30 days of a request.

Ramping Rates

Ramping Rate Requirement

Kaweah 1 Diversion would operate such that a change in the flowline diversion amount would not cause instream flows downstream of the diversion, at the time of the diversion change, to decrease at a rate (cfs/hr) greater than the following:

- Down Ramping – Instream flows, as measured at the beginning of a diversion change, would not decrease at a rate greater than 30 percent of the existing streamflow per hour as a result of changes in the flowline diversion amount.

Ramping rates in the East Fork Kaweah River downstream of the Kaweah 1 Diversion Dam would be measured using the USGS Gage 11208730, East Fork Kaweah River near Three Rivers, CA (instream flow) at the beginning of a diversion change and SCE Gage 202 for the amount of diversion.

The Kaweah 2 Diversion would operate such that instream flows downstream of the diversion are not decreased or increased at a rate (cfs/hr) greater than the following:

- Down Ramping: Instream flows, as measured at the beginning of a diversion change, would not decrease at a rate greater than 30 percent of the existing streamflow per hour as a result of changes in the flowline diversion amount.
- Up Ramping: Instream flows, as measured at the beginning of a diversion change, would not increase greater than 25 cfs per hour when the existing streamflow is ≤ 40 cfs. When flows are ≥ 40 cfs, there is no up ramping requirement.

Ramping rates in the Kaweah River downstream of the Kaweah 2 Diversion Dam are proposed to be measured using the USGS Gage 11208600, Kaweah River below Conduit 2 near Hammond, CA (instream flow) at the beginning of a diversion change and SCE Gage 204 for the amount of diversion.

Ramping Rate Compliance

Compliance with the Proposed Project's ramping rate must meet the following conditions:

- Implement ramping rate requirements within 30 days of License issuance.
- All specified ramping rates are in cfs per hour (cfs/hr), where the change in cfs/hr over any hourly time period would not exceed the specified ramping rate.
- The ramping requirements would be based on the hourly average flow measurement in the stream immediately prior to implementing a flowline diversion change (based on flow measured in ≤ 15 -minute time increments) and the calculated stream ramping rate (cfs/hr), based on the flowline diversion change (based on flow measured in ≤ 15 -minute time increments), should never be more than the thresholds specified for each location (e.g., hourly average stream flow at the beginning of a flow change \pm the subsequent hourly average flowline change(s)), except for the:
 - The ramping rates may be temporarily modified for short periods (up to 14 days) upon mutual agreement between SCE, State Water Board, and CDFW with notification to FERC.
 - The ramping rate may be temporarily modified if required by operating emergencies or equipment failures beyond the control of SCE. If ramping rates are modified, SCE would notify the FERC, State Water Board, and CDFW, as soon as possible, but no later than 10 business days.
- If a deviation occurs regarding compliance with ramping rate, SCE would file a report with the FERC within 30 days from the date that the data becomes available indicating the deviation. The report would, to the extent possible, identify the cause, severity, and duration of the deviation, any environmental impacts resulting from the deviation, a description of the measures implemented to correct the deviation, and the measures SCE implemented or proposed to ensure deviations do not recur. The associated gaging data from the Proposed Project would be available to the resource agencies within 30 days of a request.

Stream Gaging Monitoring Plan

The Proposed Project includes a Stream Gaging Plan (SGP) with proposed objectives to:

- Identify and describe Project gages used to document compliance with MIF and ramping rate requirements, documentation of water deliveries, and dissemination of real-time flow information to the public;

- Operation and maintenance of the gages; and
- Reporting of compliance.

Compliance Gages

The gages proposed to document compliance with MIF and ramping rate requirements are identified in Table 2–8. This table also identifies the gages used to document contractual water deliveries and disseminate real-time flow information to the public. The locations of the compliance gages are also depicted on Figure 2–3.

Table 2-8. Description of Proposed Project Gages Used for Compliance

Gage Name	SCE Gage	USGS Gage	Description	MIF	Ramping Rates	Dissemination of Real-time Flow Information	SCE's Contractual Water Delivery Obligations
East Fork Kaweah River near Three Rivers, California	201	11208730	Traditional stage-discharge stream gage located on the south-west bank of the East Fork Kaweah River. Gage measures streamflow between the intake dam and the gage pool weir.	Yes	Yes	Yes	No
East Fork Kaweah River Conduit 1 near Three Rivers, California	202	11208730	Operational Acoustic Velocity Meter (AVM) just downstream from the flowline intake that measures flow in the flowline.	No	No	No	Yes

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Gage Name	SCE Gage	USGS Gage	Description	MIF	Ramping Rates	Dissemination of Real-time Flow Information	SCE's Contractual Water Delivery Obligations
Kaweah River below Conduit 2 near Hammond, California	203	11208600	Traditional stage-discharge stream gage located on the west bank of the Kaweah River that measures stream flow approximately 500 feet downstream of the Kaweah 2 Diversion Dam.	Yes	Yes	Yes	No
Kaweah River Conduit 2 near Hammond, California	204a	11208600	Operational Acoustic Doppler Current Profiler (ADCP) located on the Kaweah 2 Flowline that measures flow from the Kaweah 2 Intake into the flowline.	No	No	No	Yes

NOTES: ADCP = Acoustic Doppler Current Profiler
 AVM = Acoustic Velocity Meter

Operations and Maintenance of Gages

All the gages record at a time increment of ≤ 15 minutes. The gages would be maintained and operated by SCE. SCE proposes to implement current USGS gaging standards for the type of measurement system specific to each location (e.g., bubble gage, acoustic Doppler current profiler [ADCP], AVM).

Reporting

SCE would prepare a brief annual report to document compliance with MIF and ramping rate requirements for each calendar year. The report would also summarize dissemination of real-time flow information to the public. The annual report would be filed with the FERC within the first quarter of each year and distributed to the State Water Board and CDFW. Upon completion of the quality assurance/quality control (QA/QC) process and upon request, flow data would be provided to FERC, State Water Board, and CDFW.

If a deviation occurs regarding compliance with MIF and ramping rate requirements, SCE would file a report with the FERC within 30 days from the date that the data becomes available indicating the deviation. The report would, to the extent possible, identify the cause, severity, and duration of the deviation, any environmental impacts resulting from the deviation, a description of the measures implemented to correct the deviation, and the measures SCE implemented or proposed to ensure deviations do not recur. The gaging data from would be available to the resource agencies within 30 days of a request.

Proposed Project Sediment Management and Erosion Control Plan

The following Sediment Management and Erosion Control Plan (SMECP) is proposed to maintain and protect system reliability and protect environmental resources. The objectives of the SMECP are to:

- Establish methods for the removal and disposition of sediment that has accumulated in Proposed Project flowlines and forebays, and around intake structures; and
- Establish inspection protocols at the Kaweah 1 and Kaweah 2 flowlines and measures to implement in the event of a flowline failure.

Sediment Management

Consistent with existing operations, under the Proposed Project, sediment management activities would be conducted at the Kaweah 1 Intake, Kaweah 1 Forebay Tank, Kaweah 2 Intake, Kaweah 2 Forebay, and Kaweah 3 Forebay. Sediment management activities at each location are described below:

- *Kaweah 1 Intake.* The low-level outlet at the sandbox would be routinely opened during high flows to reduce accumulation of sand/fine sediment and transport it back into the active stream channel. If larger substrate becomes trapped in the sandbox, it would be removed and placed along the margin of the active channel during the fall maintenance outage where it can be entrained into the channel during high-flow events.
- *Kaweah 1 Forebay Tank.* A low-level outlet in the forebay tank would be routinely opened during normal operations to reduce accumulations of sand/fine sediment in the bottom of the tank and transport it into an adjacent natural drainage channel. Any large materials remaining in the bottom of the tank would be removed during the fall maintenance outage and placed in the adjacent natural drainage channel where it would be transported during storm events.
- *Kaweah 2 Intake.* During high-flow events, large boulders and rocks often accumulate on the intake grate obstructing flow into the intake and, at times, allowing sediment to build up near the intake. When necessary, this rock debris would be removed and placed downstream of the diversion structure to improve flow into the intake and prevent facility damage.
- *Kaweah 2 Forebay.* Several low-level outlets in the forebay would be routinely opened during normal operations to reduce accumulation of sand/fine sediment from the bottom of the forebay and transport it into natural drainages. Any large buildup of material would be removed during the fall maintenance outage and placed in the adjacent natural drainage channel where it would be transported during storm events.
- *Kaweah 3 Forebay.* Accumulated sediment in the Kaweah 3 Forebay would be removed with heavy equipment approximately every 5 years, or as needed. The majority of the sediment removed is typically composed of sand/silt. Prior to sediment removal, water in the forebay would be lowered, first by passing water via the penstock through the Kaweah 3 Powerhouse. As the forebay water level approaches the elevation of the intake structure, diversion through the powerhouse would be discontinued and the remainder of the water would be released through the forebay's low-level outlet. The outlet would be opened no more 15 percent of its range to allow water to slowly drain from the forebay and

reduce entrainment of the sediment deposit near the low-level outlet. The water released from the low-level outlet enters a short concrete chute that discharges into an adjacent natural drainage. Sediment removal with heavy equipment would occur once the sediment in the bottom of the forebay dries. Disposition of removed sediment would be identified in consultation with BLM.

Erosion Control

The following measures are proposed to: (1) reduce the potential for a failure in Proposed Project flowlines, and (2) reduce impacts in the event of a flowline failure.

- Flowlines would be inspected routinely to identify potential maintenance issues. Any maintenance issues identified would be addressed in a timely manner.
- In the event of flowline failure, flow would be shut off, as soon as possible, and diversions would be discontinued until repairs are completed.
- SCE would repair the flowline, as soon as practicable, considering engineering constraints, site conditions, and environmental protection.

Consultation and Reporting

SCE would prepare a brief annual report to document sediment management and erosion control activities implemented during the previous calendar year. The annual report would be filed with the FERC within the first quarter of each year and distributed to the BLM, State Water Board, and CDFW.

Proposed Project Fish Population Monitoring Plan

The purpose of the Fish Population Monitoring Plan (FPMP) is to obtain, for comparative purposes, periodic information on fish populations in bypass and comparative reaches associated with the Proposed Project under the flow regimes specified in the new license. This information would be compared to historical fish population data collected during relicensing study (AQ 2 – Fish Population Technical Study Report (TSR); Supporting Document A of the License Application).

Specific objectives of FPMP are to:

- Document fish species composition, distribution, and abundance in the bypass and comparison reaches,¹⁹

¹⁹ A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach. Typically, the diverted water re-enters the river through a powerhouse at the downstream end of the bypass reach.

- Characterize fish growth, condition factor, and population age structure in the bypass and comparison reaches.

Implementation Schedule

Fish population monitoring would be implemented in Year 2 following license issuance and every 10 years thereafter.

Sampling Locations

The sampling locations include the bypass reaches associated with the Proposed Project and the comparison reaches upstream or downstream of the Proposed Project. Specific sampling locations are identified in Table 2–9 and Figure 2–4 and are consistent with those sampled during relicensing studies of the Proposed Project. Some portions of the East Fork Kaweah River downstream of Kaweah 1 Diversion are inaccessible due to the rugged terrain. Field data would only be collected in portions of the river that are accessible.

It should be noted that the majority of lands along the bypass reaches are privately owned and outside the FERC Project boundary. For the purposes of fish population monitoring, the following steps would be taken to obtain approval to conduct field studies on private property:

- Provide notification to landowners about fish population monitoring and request authorization to enter property to conduct the field studies.
- If authorization is obtained, SCE would complete field studies at the location as described in the Table 2–9, otherwise, the nearest location within the reach where permission is granted would be sampled.

River sampling sites (electrofishing and/or snorkeling) are generally 100 meters (m) long or longer (one site is 83 m). Some of the larger river sites (e.g., Kaweah River) require sampling sites up to 260 m to include multiple habitat types. Sampling sites were chosen far enough upstream or downstream of access locations to reduce the effects of fishing on fish population results, where applicable. Where comparisons are to be made between locations upstream and downstream of Proposed Project facilities, comparison study sites are, to the extent possible, located in sections of river with similar habitat types and similar sampling methods would be used.

Table 2-9. Fish Population Study Sites and Sampling Locations

Study Reach	Site ID	Sampling Location River Mile	Sampling Location Elevation (feet mean sea level)	Sampling Location GPS at Downstream Starting Location	Site Length (feet)	Bypass Reaches	Comparison Reaches (upstream or downstream of the Proposed Project)
<i>Kaweah River</i>							
Kaweah River Upstream of Kaweah 3 Powerhouse	US PH3	9.1	1,390	36.48756 -118.83513	671.4	No	Yes
Kaweah River Downstream of Kaweah 3 Powerhouse and Upstream of the East Fork Kaweah River Confluence	DS PH3	8.6	1,305	36.48091 -118.83754	434.8	Yes	No
Kaweah River Downstream of East Fork Kaweah Confluence and Upstream of Kaweah 1 Powerhouse	US PH1	7.1	1,135	36.47197 -118.85854	851.8	Yes	No
Kaweah River Downstream of Kaweah 1 Powerhouse and Upstream of Kaweah 2 Powerhouse	US PH2	5.1	960	36.46070 -118.87954	782.8	Yes	No
Kaweah River Downstream of Kaweah 2 Powerhouse	DS PH2	4.7	915	36.46098 -118.88537	635.8	No	Yes

Kaweah Hydroelectric Project
 Draft Initial Study / Negative Declaration

Study Reach	Site ID	Sampling Location River Mile	Sampling Location Elevation (feet mean sea level)	Sampling Location GPS at Downstream Starting Location	Site Length (feet)	Bypass Reaches	Comparison Reaches (upstream or downstream of the Proposed Project)
<i>East Fork Kaweah River</i>							
East Fork Kaweah River Upstream of the Kaweah 1 Diversion	EF US K1 Div	5.6	2,820	36.44527 -118.78006	272.9	No	Yes
East Fork Kaweah River Downstream of the Kaweah 1 Diversion	EF DS K1 Div	4.7	2,580	36.45113 -118.79029	434.7	Yes	No
East Fork Kaweah River Upstream of Confluence with Kaweah River	EF US Confl	0.1	1,280	36.47896 -118.83752	574.9	Yes	No

NOTES: Confl = Confluence
 Div = Diversion
 DS = Downstream
 EF = East Fork
 GPS = Global Positioning System
 PH = Powerhouse
 US = Upstream

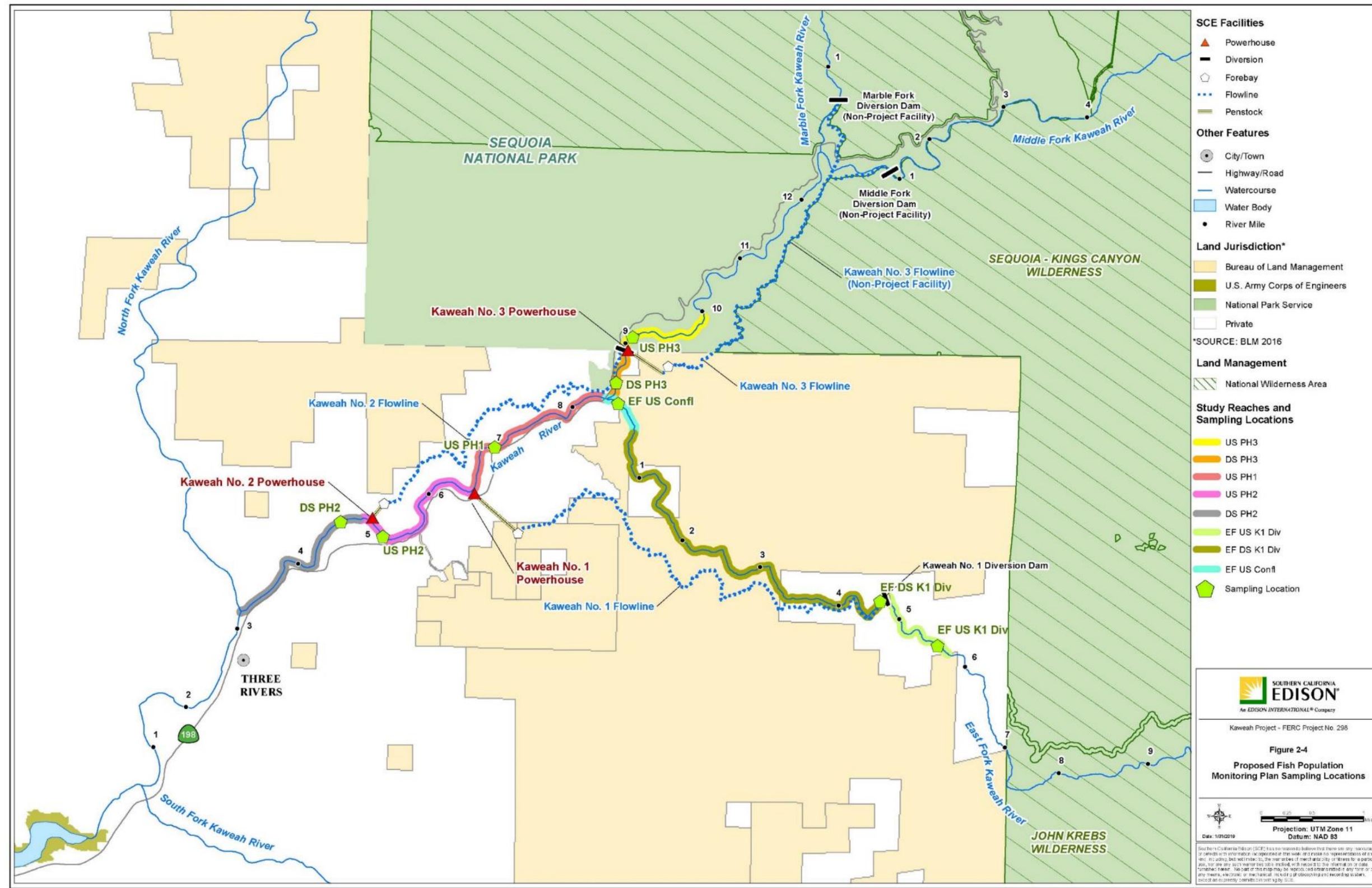


Figure 2-4. Proposed Fish Population Monitoring Plan Sampling Locations

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Survey Approach

The study sites would be sampled to identify the spatial distribution and abundance of fish species. Quantitative sampling would be conducted during the late summer/early fall base-flow period using a combination of electrofishing (shallow water) and snorkeling (deep water) at each representative reach study site (Table 2–9). Multi-pass electrofishing (e.g., Reynolds 1996; Van Deventer and Platts 1989; Rexstad and Burnham 1992) would be used to sample and estimate fish populations in shallow stream habitats (<1.5 m) at each study site. The study sites would be partitioned into mesohabitat types for sampling using block nets. Captured fish from each pass would be kept in separate live wells or buckets. Fish would be anesthetized (CO₂), enumerated, identified to species, and measured (fork length and weight), and scale samples would be obtained. Fish would be returned to the study site when the sampling is completed. Sampling protocols and field data forms would be consistent with those in Flosi et al. 1998 and the previous relicensing study. The lengths and widths of the habitat units sampled would be recorded to calculate fish abundance by length and area (density) of stream sampled. Very small, post-larval hardhead or Sacramento pikeminnow that cannot be identified to species would be recorded as unidentified juvenile mixed minnow.

Snorkeling (Dolloff et al. 1996) would be used to assess fish populations in deep water habitats (≥ 1.5 m) at each representative reach study site (Table 2–10). Snorkelers would survey in lanes along the river to identify, count, and estimate the length of each fish observed. Fish data would be recorded by habitat unit type. Snorkeling protocols and field data forms would be consistent with those in Flosi et al. 1998 and the previous relicensing study. Juvenile hardhead and Sacramento pikeminnow (less than approximately 3 inches) would be recorded as a single category, unidentified juvenile mixed minnow, where identification is uncertain.

Data Analysis

The following data analyses are proposed to be completed:

- Fish standing crop would be estimated for each species at each study site including density (e.g., fish/mile and fish/acre) and biomass (lbs/mile and lbs/acre). For each mesohabitat sampled in each study reach, the number and weight of fish would be divided by mesohabitat length to obtain fish/mile and lbs/mile and by mesohabitat area to obtain fish/acre and lbs/acre. The fish density and biomass for each mesohabitat type sampled within each study reach would be averaged and then multiplied by (weighted by) the proportion of the mesohabitat type in the study reach. The weighted mesohabitat densities would then be summed to obtain fish density and biomass for each study reach.

Because cascade habitat is not safe to sample, cascade habitat would be excluded from the analysis.

- A distribution map for each species in the study area would be created using the quantitative abundance estimates.
- Length frequency histograms of fish data would be generated to examine distribution modality and, in conjunction with scale data, to determine the age structure of fish populations.
- Fish growth and age data would be summarized using length frequency and scale analysis. The scale analysis would use the narrower growth rings (circuli) during the cold-water season compared to other times of the year to identify the number of growth years (i.e., number of annuli).
- Fish condition would be calculated using Fulton's condition factor (K) (ratio of body weight to body length). A formula attributed to Fulton (Nash et al. 2006) would be used to calculate the condition factor of individual fish (Ricker 1975):
$$K = \text{weight (g)} \times 10^5 / (\text{fork length [mm]}^3)$$
- The fish population data would be compared to historical data collected as part of the relicensing study as well as any subsequent monitoring sampling effort.

Consultation and Reporting

A Fish Population Monitoring Report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment within 90 days following the completion of each monitoring year. The report, where appropriate, would follow the general presentation layout for fish sampling data provided in the AQ 2 – Fish Population TSR (Supporting Document A of the License Application). An electronic database (Excel spreadsheet) of the fish sampling data (date, location, fish species, fish size, and fish sampling techniques) would be developed and made available upon request. A 60-day review period would be provided to the agencies. Based on the results of the monitoring and/or comments received during the review process, SCE and the agencies may call a meeting to discuss the results. Within 60 days of the end of the comment period, comments would be addressed, and the final report would be distributed by SCE to the agencies (BLM, State Water Board, and CDFW) and filed with FERC.

Proposed Project Entrainment Study Measure

The Entrainment Study Measure (ESM) requires SCE to complete the Revised AQ 9 – Entrainment Technical Study Plan (TSP) as filed with the FERC on December 11, 2018.²⁰ Specifically, the Kaweah 1 Flowline Sampling component of the TSP would be completed which was delayed due to a landslide that damaged the Kaweah 1 Flowline such that the Proposed Project was not diverting water from the East Fork Kaweah River for generation purposes. All other components of the AQ 9 – Entrainment TSP were completed and results filed with FERC on June 5, 2020.²¹

Entrainment Study Measure – Kaweah 1 Flowline Sampling

In SCE's Final AQ 9 – Entrainment TSR (filed with FERC on June 5, 2020), SCE committed to conducting entrainment sampling at the Kaweah 1 Flowline as a condition of the new license. Specifically, within 18 months of license issuance, SCE would complete entrainment sampling at the Kaweah 1 Flowline consistent with the approach described in the Revised AQ 9 – Entrainment TSP (filed with FERC on December 11, 2018). A Draft Supplemental AQ 9 – Entrainment TSR summarizing results of sampling at the Kaweah 1 Flowline would be prepared by SCE and distributed to State Water Board and CDFW for review and collaboration following completion of the entrainment sampling. A 45-day review period would be provided to the agencies. Based on results of the entrainment and/or comments received during the review process, SCE and the agencies may call a meeting to discuss the study results and associated recommendations. Within 30 days following the close of the comment period, SCE would address any comments and file the Final Supplemental AQ 9 – Entrainment TSR with FERC and concurrently distribute to agencies (State Water Board and CDFW).

Further, SCE proposes to consult with State Water Board and CDFW no later than 45 days following distribution of the Final Supplemental AQ 9 – Entrainment TSR to identify whether additional sampling in the Kaweah 1 Flowline or mitigation measures (i.e., aquatic habitat enhancement or fish screening) is appropriate. Recommendations by the parties will be filed by SCE with FERC within 30 days following completion of the consultation. The filing would identify whether consensus was reached on the recommendation(s).

²⁰ FERC Accession No.: 20181212-5130; Available online at: www.ferc.gov.

²¹ FERC Accession No.: 20200605-5134; Available online at: www.ferc.gov.

Proposed Project Water Temperature Monitoring Plan

The purpose of the Water Temperature Monitoring Plan (WTMP) is to periodically document water temperature and meteorological conditions in the bypass reaches²² and comparison reaches. This information would be compared to historical water temperature data collected during the relicensing study (AQ 4 – Water TSR; Supporting Document A of the License Application).

Implementation Schedule

Water temperature monitoring would be implemented in Year 2 following license issuance and every 10 years thereafter.

Sampling Locations

The sampling locations include the bypass reaches associated with the Proposed Project. Specific sampling locations are identified in Table 2–10 and Figure 2–5 and are consistent with a subset of those sampled during relicensing of the Proposed Project.

It should be noted that the majority of lands along the bypass reaches are privately owned and outside the FERC Project boundary. For the purposes of water temperature monitoring, SCE would obtain approval to conduct field studies on private property.

Water temperature would be monitored at 13 monitoring sites on the bypass reaches. Additionally, two air temperature monitoring sites and one weather station monitoring site would also be monitored.

²² A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach. Typically, the diverted water re-enters the river through a powerhouse at the downstream end of the bypass reach.

Table 2-10. Water Temperature Monitoring Sites

Monitoring Sites	Number of Monitoring Loggers	Sampling Location River Mile	Sampling Location GPS Location	Bypass Reaches	Comparison Reaches (Upstream or Downstream of the Proposed Project)
Water Temperature Monitoring Sites					
<i>Kaweah River</i>					
Kaweah River Upstream of Kaweah 3 Powerhouse	2	8.96	36.48635136, -118.8361886	No	Yes
Kaweah River Downstream of Kaweah 3 Powerhouse	2	8.79	36.48439526, -118.8357774	Yes	No
Kaweah River Downstream of Kaweah 3 Powerhouse	2	8.82	36.48405746, -118.8359942	Yes	No
Kaweah 3 Powerhouse Tailrace	2	8.95	36.48620181, -118.8357265	Yes	No
Kaweah River Upstream of the Confluence with East Fork Kaweah River	2	8.44	36.47956494, -118.8380172	Yes	No
Kaweah River Downstream of the Confluence with East Fork Kaweah River	2	8.30	36.4794382, -118.8402536	Yes	No
Kaweah River Upstream of Kaweah 1 Powerhouse	2	6.51	36.46579943, -118.862146	Yes	No

Monitoring Sites	Number of Monitoring Loggers	Sampling Location River Mile	Sampling Location GPS Location	Bypass Reaches	Comparison Reaches (Upstream or Downstream of the Proposed Project)
Kaweah River Upstream of Kaweah 1 Powerhouse	2	6.52	36.46593544, -118.8620571	Yes	No
Kaweah River Downstream of Kaweah 1 Powerhouse	2	6.45	36.46562639, -118.863133	Yes	No
Kaweah 1 Powerhouse Tailrace	2	6.49	36.4653658, -118.8620713	Yes	No
Kaweah River Upstream of Kaweah 2 Powerhouse	2	5.04	36.46071055, -118.8796395	Yes	No
Kaweah River Downstream of Kaweah 2 Powerhouse	3	4.81	36.4613941, -118.8834057	No	Yes
Kaweah 2 Powerhouse Tailrace	2	4.95	36.46186337, -118.8806466	Yes	No
<i>East Fork Kaweah River</i>					
East Fork Kaweah River Downstream of the Kaweah 1 Diversion Dam	2	4.68	36.45138042, -118.7899557	Yes	No
East Fork Kaweah River Upstream of the Confluence with Kaweah River	2	0.09	36.47896325, -118.8374857	Yes	No

Monitoring Sites	Number of Monitoring Loggers	Sampling Location River Mile	Sampling Location GPS Location	Bypass Reaches	Comparison Reaches (Upstream or Downstream of the Proposed Project)
<i>Air Temperature Monitoring Sites</i>					
Kaweah 3 Powerhouse Air Temp	2	8.93	36.48592359, -118.8364717	No	No
Kaweah 1 Diversion Dam Air Temp	2	4.48	36.44906467, -118.7916033	No	No
<i>Weather Station Monitoring Sites</i>					
Kaweah 1 Powerhouse Weather Station	1	6.49	36.465126, -118.861466	No	No

NOTES: GPS = Global Positioning System

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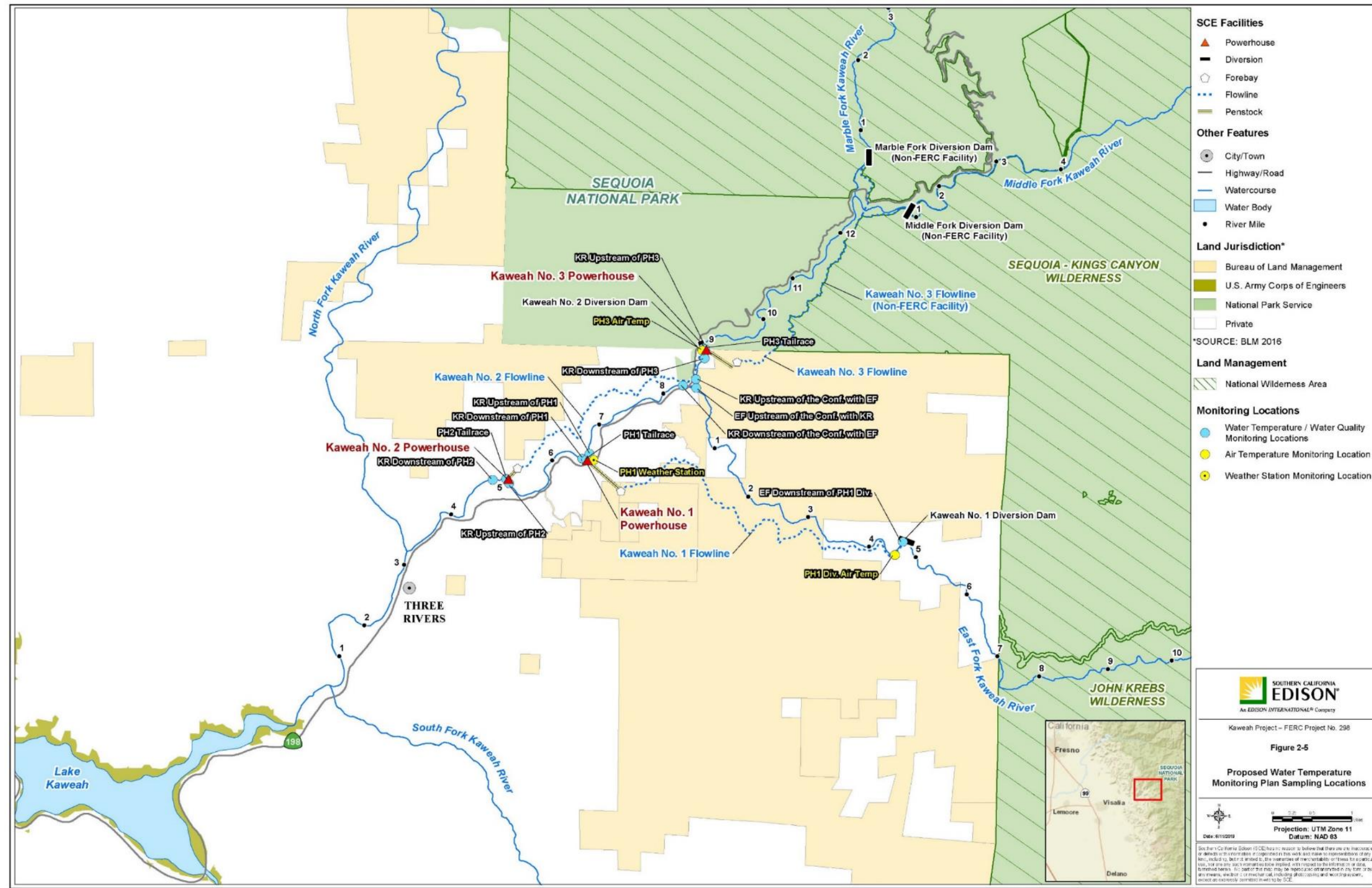


Figure 2-5. Proposed Water Temperature Monitoring Plan Sampling Locations

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Survey Approach

Water Temperature Monitoring

Water temperature monitoring would occur from April 1 through October 31 to coincide with spring runoff and summer months when water temperatures are of most concern to aquatic species. The water temperature monitoring sites would be visited and data downloaded after high flows have declined, approximately June, and in October at the end of the monitoring period.

Each water temperature monitoring site would be equipped with two temperature loggers set to record data at 15-minute intervals. The purpose of the redundant loggers is to reduce the probability that water temperature data at any particular site would be lost. Each water temperature logger would be installed in a non-descript metal pipe housing that requires specialized tools (e.g., key or wrench) to open, or equivalent. The logger and housing would be secured to an anchor point (tree trunk, large boulder, etc.) using a 1/8-inch diameter steel cable wire, or equivalent. The loggers would be placed in the thalweg of the channel to decrease the probability that the loggers could become dewatered during low-flow conditions.

During the time the data are downloaded a National Institute of Standards and Technology (NIST) traceable digital thermometer would be used to measure the water temperature at each logger site. Measured water temperature and other observations would be noted on the data download data sheet. After the logger is removed from the water, it would be cleaned and visually inspected. The data would be downloaded into an optic shuttle and then later to a personal computer. Raw water temperature data files would be backed up prior to data analysis.

The water temperature reading from the NIST-traceable thermometer would then be compared to the last logger reading to evaluate potential drift of the logger measurements. To reduce the potential for error in data collection, care would be taken to record the time when each temperature logger is deployed, removed, and, if appropriate, re-deployed in the water.

The equipment necessary to replace or fix an installation would be in the possession of the technicians downloading the data. Should a logger need to be replaced because of failure or vandalism, the technicians would be able to do so immediately to reduce the potential for additional data loss. Any loggers or optic shuttles that fail to download would be returned to the manufacturer in an attempt to recover the data.

Following download, the data from each of the water temperature loggers would be visually and graphically inspected for anomalies. The data from the two loggers at each monitoring site would be compared to provide additional information on potential

anomalies. Spurious data would be removed from the database. The raw data files would be retained in their unaltered state for future availability.

Flow data would also be obtained from SCE gages or from the USGS Gage located closest to each water temperature monitoring station.

Meteorological Monitoring

Meteorological data would also be collected. Two air temperature monitoring sites and a weather station monitoring site would be installed to collect air temperature, wind speed, relative humidity, and solar radiation. Meteorological monitoring sites would be established, visited, and downloaded on the same schedule as the water temperature monitoring sites and would utilize the same data backup methodologies.

Data Analysis

Following QA/QC, daily average maximum, and minimum water temperature would be determined from the 15-minute data. The daily average temperature and range for each monitoring station would be plotted with data from previous monitoring efforts for comparison. Hydrologic and meteorological data would be used to help interpret the water temperature data. The flow data would be summarized in graphs and tables illustrating daily average flow during the water temperature monitoring period.

Consultation and Reporting

A Water Temperature Monitoring Report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment within 90 days following the completion of each monitoring year. The report, where appropriate, would follow the general presentation layout for water quality data provided in the AQ 4 – Water Temperature TSR (Supporting Document A of the License Application). The report would document temperature conditions at the sampling locations and compare the data to historical data. A 60-day review period would be provided to the agencies. Based on the results of the monitoring and/or comments received during the review process, SCE and the agencies may call a meeting to discuss the results. Within 60 days of the end of the comment period, comments would be addressed, and the final report would be distributed by SCE to the agencies (BLM, State Water Board, and CDFW) and filed with FERC.

Proposed Project Water Quality Monitoring Plan

The purpose of the Water Quality Monitoring Plan (WQMP) is to:

- Periodically characterize physical, chemical, and bacterial water quality conditions in the bypass reaches²³ and comparison reaches and compare to the current Basin Plan objectives and water quality standards and other applicable Environmental Protection Agency (EPA) national or California Toxics Rule (CTR) standards.

This information would be compared to historical water quality data collected during the relicensing study (AQ 6 – Water Quality TSR; Supporting Document A of the License Application).

Implementation Schedule

Water quality monitoring would be implemented in Year 2 following license issuance and every 10 years thereafter.

Sampling Locations

The sampling locations include the bypass reaches associated with the Proposed Project and the comparison reaches upstream or downstream of the Project. Specific sampling locations are identified in Table 2–11 and Figure 2–6 and are consistent with a subset of those sampled during relicensing of the Proposed Project.

²³ A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach. Typically the diverted water re-enters the river through a powerhouse at the downstream end of the bypass reach.

Table 2–11. Water Quality Monitoring Sites

Monitoring Sites	Sampling Location River Mile	Sampling Location GPS Location	Bypass Reaches	Comparison Reaches (Upstream or Downstream of the Proposed Project)
<i>Kaweah River</i>				
Kaweah River Upstream of Kaweah 3 Powerhouse	8.96	36.48633707, -118.83617117	No	Yes
Kaweah River Downstream of Kaweah 3 Powerhouse	8.80	36.48413378, -118.83584010	Yes	No
Kaweah 3 Powerhouse Tailrace	8.95	36.48620181, -118.8357265	Yes	No
Kaweah River Upstream of the Confluence with East Fork Kaweah River	8.49	36.48022153, -118.83761179	Yes	No
Kaweah River Downstream of the Confluence with East Fork Kaweah River	8.30	36.47938158, -118.84005867	Yes	No
Kaweah River Upstream of Kaweah 1 Powerhouse	6.51	36.46577795, -118.86224606	Yes	No
Kaweah River Downstream of Kaweah 1 Powerhouse	6.45	36.46559921, -118.86330195	Yes	No
Kaweah 1 Powerhouse Tailrace	6.49	36.4653658, -118.8620713	Yes	No
Kaweah River Upstream of Kaweah 2 Powerhouse	5.04	36.46066806, -118.87943125	Yes	No
Kaweah River Downstream of Kaweah 2 Powerhouse	4.81	36.46135383, -118.88338692	No	Yes
Kaweah 2 Powerhouse Tailrace	4.95	36.46186337, -118.8806466	Yes	No

Monitoring Sites	Sampling Location River Mile	Sampling Location GPS Location	Bypass Reaches	Comparison Reaches (Upstream or Downstream of the Proposed Project)
<i>East Fork Kaweah River</i>				
East Fork Kaweah River Downstream of the Kaweah 1 Diversion Dam	4.68	36.45140708, -118.78998022	Yes	No
East Fork Kaweah River Upstream of the Confluence with Kaweah River	0.09	36.47898725, -118.83757148	Yes	No

NOTES: GPS = Global Positioning System

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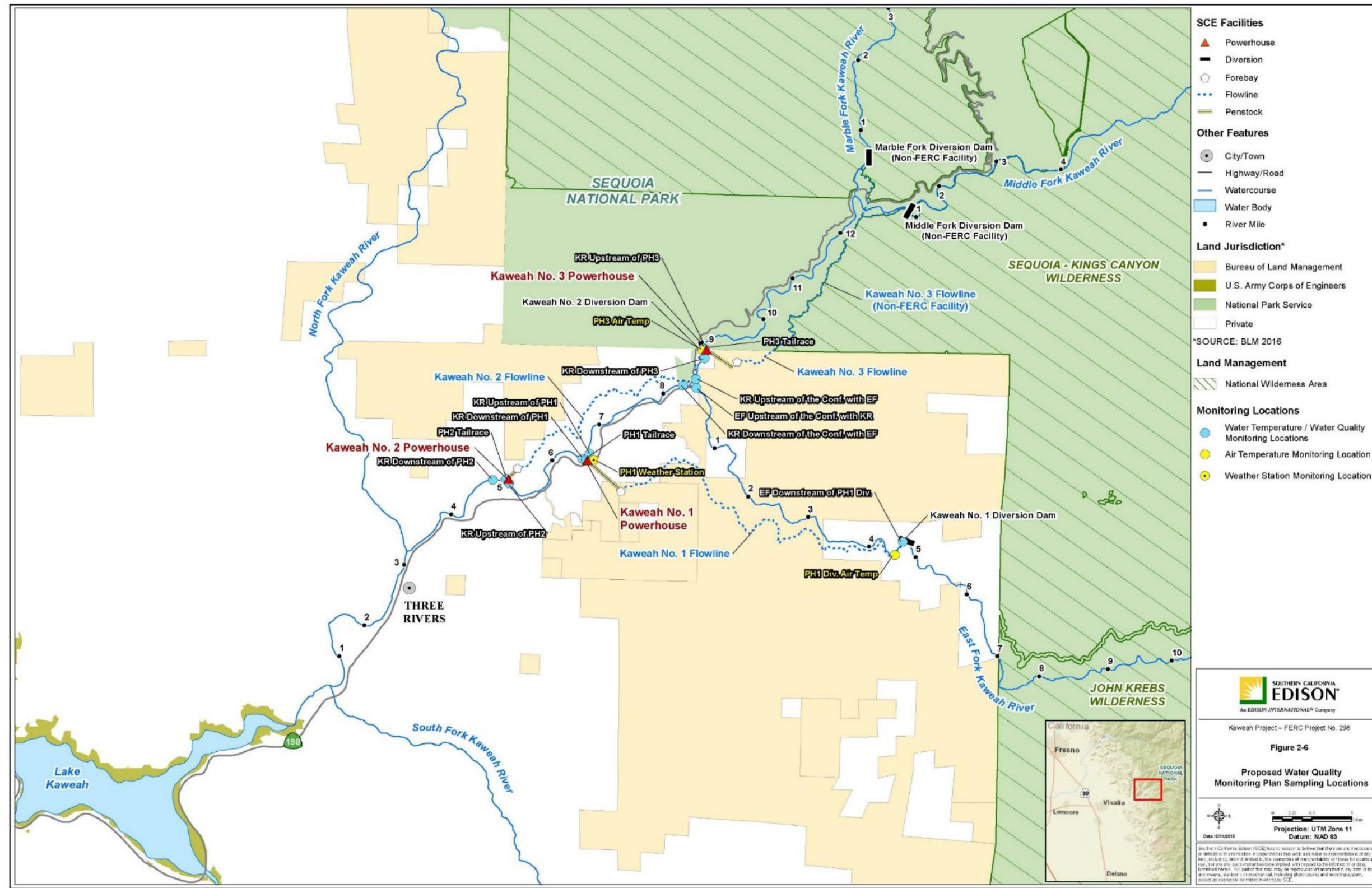


Figure 2-6. Proposed Water Quality Monitoring Plan Sampling Locations

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It should be noted that the majority of lands along the bypass reaches are privately owned and outside the FERC Project boundary. For the purposes of water quality monitoring, SCE would obtain approval to conduct field studies on private property

Survey Approach

The water quality sampling program includes in-situ water quality measurements, general water quality sampling, coliform sampling, laboratory analysis and reporting, and QA/QC procedures. Each are described below.

In-situ Field Measurements

In-situ water quality measurements (water temperature, dissolved oxygen [DO], turbidity, conductivity, and pH) would be collected at sampling locations listed in Table 2–12 using a YSI® meter. Samples would be collected during the spring runoff (May), and during the summer low-flow or base-flow period (August). Pre- and post-sampling calibration of *in-situ* instrumentation would be conducted following the manufacturer's instructions.

The results of the *in-situ* monitoring would be documented on field data sheets and then entered into Excel spreadsheets. QA/QC of the data entry would be subsequently performed by a separate individual.

General Water Quality Sampling

General water quality samples (e.g., calcium, chloride, hardness, dissolved metals, etc.) would be collected at sampling locations listed in Table 2–12 and depicted on Figure 2–6. Samples would be collected twice during the year: once during the spring runoff (May) and once during the summer low-flow period (August) to screen for potential water quality issues. Samples would be collected using methods consistent with the EPA 1669 sampling protocol Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria (EPA 1996) and the previous relicensing study. The water quality samples would be collected just below the water surface in areas of steady flow.

Table 2–12. Parameters for Water Quality Monitoring and Laboratory Analysis

Parameter	Analysis Method	Sample Holding Times
Water Quality Monitoring Parameter		
<i>In-Situ Measurements</i>		
• Dissolved Oxygen (DO)	Water Quality Meter	Not Applicable
• Secchi Depth	Secchi Disk	Not Applicable
• PH	Water Quality Meter	Not Applicable
• Water Temperature	Water Quality Meter	Not Applicable
• Specific Conductance	Water Quality Meter	Not Applicable
Laboratory Analysis Parameter		
<i>General Parameters</i>		
• Calcium	EPA–200.7	180 days
• Chloride	EPA–300.0	28 days
• Hardness	EPA–130.2	180 days
• Magnesium	EPA–200.7	180 days
• Nitrate/Nitrite	EPA–353.2	48 hours
• Ammonia as N	EPA–350.1	28 days
• Total Kjeldahl Nitrogen	EPA–351.2	28 days
• Total Phosphorus	EPA–365.2	28 days
• Ortho-phosphate	EPA–365.1	48 hours
• Potassium	EPA–200.7	180 days
• Sodium	EPA–200.7	180 days
• Sulfate	EPA–300.0	180 days
• Total Dissolved Solids	EPA–160.1	7 days
• Total Suspended Solids	EPA–160.2	7 days
• Turbidity	EPA–180.1	48 hours

Parameter	Analysis Method	Sample Holding Times
• TOC	EPA-415.1	28 days
• Total Alkalinity	EPA-310.1	14 days
<i>Metals – Dissolved</i>		
• Arsenic	EPA-1638	48 hours
• Cadmium	EPA-1638	48 hours
• Copper	EPA-1638	48 hours
• Iron	EPA -1638	48 hours
• Lead	EPA-1638	48 hours
• Manganese	EPA-1638	48 hours
• Nickel	EPA-1638	48 hours
• Chromium	EPA-1638	48 hours
• Total Metals		
• Mercury	EPA-1631e	48 hours
<i>Hydrocarbons</i>		
• Methyl-tertiary Butyl Ether (MtBE)	EPA-8260	14 days
• Total Petroleum Hydrocarbons	EPA-8020	14 days
• Oil and Grease	EPA-1664	48 hours
<i>Bacteria</i>		
• Total Coliform	EPA-SM9222B	24 hours
• Fecal Coliform	EPA-SM922B	24 hours

Coliform Sampling

Total and fecal coliform, specifically *Escherichia coli* (*E. coli*), sampling would be conducted to determine if study waters met objectives for contact recreational activities identified by EPA (2012). Samples would be collected at a near-shore location immediately above and below the river access area near Kaweah 2 Powerhouse (“Edison Beach”) where contact recreation (e.g., swimming) occurs. Coliform samples would be collected five times between July 1 and July 31 which is within the 30-day

period mandated by the Basin Plan. Samples would generally be collected in the afternoon when the access area is open to the public (Monday to Thursday; 8 am to 7 pm).

Laboratory Analysis and Reporting

Water quality samples collected during the field program would be analyzed by State-certified laboratories approved by the State Water Board for chemical analysis. Standard QA procedures would be performed by the laboratories during analyses of water samples. These included matrix and laboratory spikes and spike duplicates, matrix duplicates, and method blanks as appropriate. A summary of the QA measures would be included with each certified laboratory report. A QA/QC screening level review would be conducted on laboratory analytical reports.

The laboratories would attempt to attain reporting and detection limits that are at or below the applicable regulatory criteria. The parameters analyzed by the laboratories are provided in Table 2–12. The laboratories would report each chemical parameter with an associated method detection limit (MDL), method reporting limit (MRL or RL), and/or practical quantitation limit (PQL). The MDL is the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank result (EPA 2016). MRL and PQL are laboratory specific measures of the lowest concentration the laboratory could reliably reproduce (usually 3 to 10 times the MDL).

Data Analysis

The results from the water quality sampling would be documented in tables and then compared to the current Basin Plan water quality objectives, the CTR, and applicable EPA national water quality criteria. The water quality data would also be compared to historical data collected as part of the relicensing study as well as any subsequent monitoring sampling effort.

Consultation and Reporting

A Water Quality Monitoring Report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment within 120 days following the completion of each monitoring year. The report, where appropriate, would follow the general presentation layout for water quality data provided in the AQ 6 – Water Quality TSR (Supporting Document A of the License Application). A 60-day review period would be provided to the agencies. Based on the results of the monitoring and/or comments received during the review process, SCE and the agencies may call a meeting to discuss the results. Within 60 days of the end of the comment period, comments would be addressed and the final report would be distributed by SCE to the agencies (BLM, State Water Board, and CDFW) and filed with FERC.

2.3.5.2 Cultural Resources

Historic Properties Management Plan

The HPMP addresses the management and treatment of historic properties that have been determined eligible for inclusion in the NRHP and unevaluated cultural resources within the Proposed Project Area of Potential Effect (APE) over the term of the new license. The HPMP serves as an update to the existing Cultural Resources Management Plan (CRMP). Specifically, the HPMP:

- Defines the APE;
- Describes cultural resource inventory studies and NRHP-eligibility studies conducted for the Proposed Project and their results;
- Describes the statutes, regulations, and executive orders that pertain to cultural resources management;
- Identifies potential Proposed Project-related effects on cultural resources located within the APE;
- Identifies measures to manage Proposed Project-related activities in the vicinity of cultural resources located within the APE;
- Describes the methodology and approach for evaluating unevaluated cultural resources for the NRHP, documented in an NRHP Evaluation Plan appended to the HPMP;
- Describes specific classifications of exempt and screened Proposed Project activities in relation to cultural resources and describes consultation requirements regarding activities that have the potential to cause adverse effects to historic properties or unevaluated cultural resources; and
- Describes HPMP reporting requirements.

2.3.5.3 Land Resources

Proposed Project Road and Trail Management Plan

The Proposed Project includes implementation of a Project Road and Trail Management Plan (RTMP) to maintain access to Project facilities, protect worker/public health and safety, and control erosion and sedimentation.

Refer to Table 2–13 for a list of Proposed Project access roads and trails. The following provides a description of Proposed Project road and trail maintenance and defines measures that would be implemented when conducting these activities.

Proposed Project road maintenance includes:

- Inspection of Proposed Project roads during routine operation and maintenance of Proposed Project facilities to identify the need for minor or major road maintenance.
 - Minor road maintenance includes debris removal; basic repairs, including filling of potholes; maintenance of erosion control features such as culverts, drains, ditches, and water bars; repair, replacement, or installation of access control features such as posts, cables, rails, gates, and barrier rock; bridge deck replacement; and repair and replacement of signage. Minor repairs would be completed during the course of normal operation and maintenance activities.
 - Major road maintenance includes installation or replacement of culverts and other drainage features; grading; sealing; and resurfacing. Major repairs would be completed in consultation with Tulare County or BLM (depending upon jurisdiction).

Table 2–13. Proposed Project Access Roads and Trails

Development	Access Road / Trail Name
Access Roads	
Kaweah 1	Kaweah 1 Flowline Access Road – Bear Canyon
Kaweah 1	Kaweah 1 Flowline Access Road – Grapevine
Kaweah 1	Kaweah 1 Flowline Access Road – Lower Pine
Kaweah 1	Kaweah 1 Flowline Access Road – Lower Pine (spur)
Kaweah 1	Kaweah 1 Flowline Access Road – Lumberyard
Kaweah 1	Kaweah 1 Flowline Access Road – Lumberyard (spur)
Kaweah 1	Kaweah 1 Flowline Access Road – Slick Rock
Kaweah 1	Kaweah 1 Flowline Access Road – Slick Rock
Kaweah 1	Kaweah 1 Flowline Access Road – Summit
Kaweah 1	Kaweah 1 Flowline Access Road – Unnamed
Kaweah 1	Kaweah 1 Flowline Access Road – Upper Pine
Kaweah 1	Kaweah 1 Forebay Road
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 2 Brushout Grid
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 4 East
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 4 West

Development	Access Road / Trail Name
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 5
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 6 East
Kaweah 2	Kaweah 2 Flowline Access Road – Canal 6 West
Kaweah 2	Kaweah 2 Flowline Access Road – Flume 8
Kaweah 2	Kaweah 2 Flowline Access Road – Flume 11
Kaweah 2	Kaweah 2 Flowline Access Road – Open Siphon Grids
Kaweah 2	Kaweah 2 Flowline Access Road – Red Barn
Kaweah 2	Kaweah 2 Flowline Center Access Road
Kaweah 2	Kaweah 2 Flowline East Access Road
Kaweah 2	Kaweah 2 Flowline West Access Road
Kaweah 2	Kaweah 2 Forebay Road
Kaweah 2	Kaweah 2 Intake Road
Kaweah 2	Kaweah 2 Penstock Road
Kaweah 3	Kaweah 3 Forebay Road
Kaweah 3	Kaweah 3 Powerhouse Road
<i>Project Trails</i>	
Kaweah 1	Kaweah 1 Flowline Access Trail – Unnamed
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 2
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 4 East
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 4 West
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 5
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 6
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 11
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 13
Kaweah 2	Kaweah 2 Flowline Access Trail – Canal 15
Kaweah 2	Kaweah 2 Flowline Access Trail – Open Siphon
Kaweah 2	Kaweah 2 Flowline Access Trail – Water User 9
Kaweah 2	Kaweah 2 Flowline Access Trail – Water User 14
Kaweah 2	Kaweah 2 Flowline Access Trail – Wildlife Crossing 2
Kaweah 3	Kaweah 3 Flowline Access Trail

The following measures would be implemented when conducting major road maintenance:

- Major road maintenance would be implemented in accordance with either Tulare County or BLM standards, as applicable, with consideration to the type and level of use that occurs along the road. Roads that are used exclusively by SCE would be maintained at a level that can be safely traveled using high clearance vehicles. Roads used by the public would be maintained at a level that can be safely traveled in a standard passenger vehicle at legal speed limits, as applicable.
- Consult with the BLM or Tulare County, as appropriate, at least 60 days prior to implementation of any major road maintenance, to review/modify proposed best management practices (BMPs) and environmental measures, as appropriate, for protection of environmental and cultural resources.
- Obtain all necessary permits and approvals prior to implementation of major road maintenance (e.g., USACE 404 Permit, State or Regional Water Board 401 Water Quality Certification, and CDFW Streambed Alteration Agreement).

Reporting

All implemented major Proposed Project road maintenance activities, including consultation, would be summarized in an annual Project Road Maintenance Summary Report that would be distributed to the BLM and/or Tulare County for review and comment. A 60-day review period would be provided to the agencies. Within 60 days of the end comment period, comments would be addressed, and the final report would be distributed by SCE to the agencies (BLM and/or Tulare County) and filed with FERC.

Project Trails

Proposed Project trail maintenance includes:

- Inspection of trails during routine operation and maintenance of Proposed Project facilities to identify maintenance needs.²⁴
 - Trail maintenance includes debris removal; repairs of the trail surface, minor brushing; maintenance of erosion control features; repair, replacement, or installation of access control structures; and repair and replacement of signage.
- Implementation of repairs during the course of normal operation and maintenance activities.

²⁴ The Project does not include any trails that have been formally developed for public use.

Emergency Road and Trail Repairs

In the event of an emergency incident that blocks road/trail access to Proposed Project facilities and/or threatens public safety, SCE would notify the appropriate land management agency (i.e., BLM or Tulare County) and implement the actions necessary to restore access as soon as possible. Once the potential safety risk has been addressed and access is reestablished, SCE would follow-up with the appropriate land management agency and determine if additional actions are necessary.

2.3.5.4 Recreation Resources

Proposed Project Recreation Enhancement Measures

Kaweah 2 Powerhouse River Access Parking Area Enhancements

The Kaweah 2 Powerhouse River Access Parking Area Measure requires SCE to maintain the existing paved parking area (6 spaces, one of which is designated as accessible) for recreational use. In addition, to enhance recreation experience and to protect environmental resources, this measure requires SCE to install a portable restroom (also known as a Porta-Potty) and a trash receptacle at the Kaweah 2 Powerhouse River Access Parking Area within one year of license issuance. The portable restroom would be American's with Disabilities Act (ADA) compliant. The trash receptacle would be an animal resistant 64-gallon container with two enclosures (doors), one for trash, and one for recyclables. Both the restroom and the trash receptacle would be painted brown, tan, or green to blend with the surrounding environment. To ensure that these features are clean and in good working order, SCE would inspect and maintain the portable bathroom and the garbage receptacle once weekly, or more frequently if use levels warrant.

Dissemination of Real-time Flow Information

The Dissemination of Real-time Flow Information Measure (RTFM) requires SCE to provide real-time flow information to the public on the East Fork Kaweah River and Kaweah River downstream of Proposed Project diversions in 1-hour time intervals using data available from two USGS stream gages:

- *East Fork Kaweah River near Three Rivers CA (USGS Gage 11208730) (SCE Gage Number 201)*. Traditional stage-discharge stream gage located on the southwest bank of the East Fork Kaweah River that measures stream flow downstream of the Kaweah 1 Diversion Dam. (Latitude 36°27'05", Longitude -118°47'15")
- *Kaweah River below Conduit 2 near Hammond CA (USGS Gage 11208600) (SCE Gage 203)*. Traditional stage-discharge stream gage located on the west

bank of the Kaweah River that measures stream flow approximately 500 feet downstream of the Kaweah 2 Diversion Dam. (Latitude 36°29'04", Longitude -118°50'06")

SCE would provide real-time 1-hour flow data for each of these sites on a website to be developed and maintained by SCE. The data provided on SCE's website would show the most recent 7 days of flow information in 1-hour increments. It is important to note that this data may not have been checked for accuracy by SCE or the USGS before posting. Therefore, the data should be considered provisional and may be subject to change. All stream flow values may be rounded to the nearest cfs, and any plots or tables showing these data may be labeled with the following or similar language: "These provisional stream flow data have not been reviewed or edited for accuracy and may be subject to significant change."

2.3.5.5 Terrestrial Resources

Proposed Project Special-Status Bat Protection Measure

The purpose of the Special-Status Bat Protection Measure is to protect day-roosting special-status bats²⁵ in the Kaweah 2 Powerhouse, Kaweah 3 Powerhouse, and the Kaweah 1 Campus maintenance building if painting or power washing of the interior walls at or near the day-roost occurs.

SCE would implement the following measures during maintenance activities (painting or power washing of interior walls) at the day-roost sites:

- In locations with day roosts, maintenance activities at the roost site would be conducted after dusk.
- In locations with night roosts, maintenance activities at the roost site would be conducted in the daylight hours.
- If it is necessary to implement the maintenance during restricted time periods (identified above), SCE would inspect the site prior to conducting the work. If no bats are present and the roost areas are unoccupied, the maintenance activities would proceed as planned. If bats are present, a qualified biologist would temporarily exclude the bats (using passive exclusion methods) until the maintenance work has been completed. SCE would consult with BLM and CDFW and obtain approval of the proposed exclusion method.

²⁵ During extensive surveys conducted as part of relicensing, only special-status bat day roosts were observed in these Project facilities.

Consultation and Reporting

Documentation of the results of the exclusion (if required) would be prepared in a brief Special-Status Bat Protection Letter Report and would be distributed to the BLM and CDFW for a 30-day review and comment period. Within 30 days of the end of the comment period, comments would be addressed, and the final letter report would be distributed by SCE to the agencies (BLM and CDFW) and filed with FERC.

Proposed Project Vegetation and Integrated Pest Management Plan

Implementation of a Vegetation and Integrated Pest Management Plan (VIPMP) is proposed to maintain access to and protect existing facilities; and provide for worker/public health and safety. Refer to Table 2–14 for the location around existing facilities where vegetation and pest management activities would be implemented.

The following provides a description of vegetation and pest management and defines measures that would be implemented when conducting these activities.

Vegetation management includes:

- *Vegetation Trimming by Hand and with Equipment:* Trimming of grasses and forbs with a weed eater; and trimming of shrubs and trees with a chain saw, other handheld saw, or pruners.
- *Herbicide Use:* Application of herbicides to control vegetation.
- *Hazard Tree Removal:* Removal of hazard trees with a chainsaw, handheld saw, or other equipment.

The following measures are proposed to be implemented when conducting vegetation management:

- No riparian vegetation would be removed. If it is determined that riparian vegetation must be removed to protect worker/public health and safety and Project facilities, SCE would consult with resources agencies and obtain approvals prior to removal.
- Herbicide application on BLM lands would be conducted in accordance with a BLM-approved Pesticide Use Permit (PUP). Herbicide application on private lands would be implemented in accordance with a Tulare County-approved PUP.
 - Each PUP would define the herbicides that can be used, species to be treated, treatment methods, treatments sites, and rates of application.
- To reduce the risk of herbicides inadvertently entering waters, no herbicides would be applied within 50 feet of streams or drainages.

Table 2-14. Location around Project Facilities where Vegetation and Pest Management would be Implemented

Project Facility	Vegetation Management Trimming by Hand	Vegetation Management Herbicide Use	Hazard Tree Removal	Pest Management (Rodenticide Use)
Diversion Dams and Pools	5 feet around perimeter	5 feet around perimeter	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Flowlines	10 feet on either side	10 feet on either side	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Forebays/Forebay Tank	10 feet around perimeter	Not Applicable	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Penstocks	5 feet on either side	Not Applicable	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Powerhouses	Within and up to 5 feet around perimeter fence	Within and up to 5 feet around perimeter fence	Conducted, as needed, to protect Project facilities and operations	Interior of facility and within perimeter fence
Switchyards	Within and up to 5 feet around perimeter fence	Within and up to 5 feet around perimeter fence	Conducted, as needed, to protect Project facilities and operations	Within perimeter fence
Transmission, Power, and Communication Lines	15 feet on either side	15 feet on either side	Conducted, as needed, to protect Project facilities and operations	Not Applicable

Project Facility	Vegetation Management Trimming by Hand	Vegetation Management Herbicide Use	Hazard Tree Removal	Pest Management (Rodenticide Use)
Repeaters	5 feet around perimeter	Not Applicable	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Roads	10 feet on either side	15 feet on either side	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Trails	5 feet on either side	Not Applicable	Conducted, as needed, to protect Project facilities and operations	Not Applicable
Kaweah 1 Powerhouse Campus	Within developed campus	Within developed campus	Conducted, as needed, to protect Project facilities and operations	Interior of facility and within perimeter fence

- Herbicide applications would not occur when weather parameters exceed label requirements, during precipitation, or when there is a forecast of greater than a 50 percent chance of precipitation in the next 48 hours.
- Herbicide use would be limited to days when measured wind conditions are less than 5 miles per hour and would be applied in a downwind direction from adjacent trees or shrubs.
- The following measure would be implemented to reduce the spread or introduction of noxious weeds:
 - SCE would wash heavy equipment previously used on non-paved surfaces, outside of the watershed, with power or high-pressure washers to remove soil, seeds, vegetation, or other seed-bearing material before using on Proposed Project operation and maintenance activities.

Pest management includes:

- Rodenticide Use: Application of rodenticides to control pests on the interior of/within perimeter fencing at Proposed Project powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities.
- Rodenticide application would be implemented by a licensed pest control advisor (PCA).

Consultation and Reporting

The Proposed Project includes scheduling an annual consultation meeting with BLM and/or Tulare County. The focus of the meeting would be to inform BLM and/or Tulare County of proposed vegetation management activities, including the method, location, and timing of activities to be implemented. As part of the coordination meeting, BLM and/or Tulare County and SCE would review proposed BMPs and measures and modify/update, as appropriate, for the protection of environmental and cultural resources.

At least 30 days prior to the annual consultation meeting, SCE would provide BLM and/or Tulare County with the proposed vegetation management activities, BMPs, and environmental and cultural measures. Within 30 days following the consultation meeting, a meeting summary would be prepared and the proposed vegetation management activities and associated BMPs and measures would be updated and provided to BLM and/or Tulare County for a 30-day review and comment. Within 30 days of the end comment period, comments would be addressed, and a final meeting summary would be distributed by SCE to BLM and/or Tulare County and filed with FERC.

Proposed Project Special-Status Plant Protection and Monitoring Plan

The purpose of the Special-Status Plant Protection and Monitoring Plan (SPPMP) is to obtain information on the location of special-status plants and mosses to allow protection during ongoing operation and maintenance of Proposed Project facilities. The objective of the SPPMP is to document special-status plants and mosses within the FERC Project boundaries where operations and maintenance activities are conducted.

Implementation Schedule

Special-status plant surveys would be implemented in Year 2 following license issuance and every 10 years thereafter.

Survey Locations

The survey area would include lands within the FERC Project boundaries where operations and/or maintenance activities are conducted, plus a protective buffer. Refer to Table 2–15 for the survey area by facility type.

In the event that access to the survey area requires crossing private property, SCE would obtain approval prior to implementation of field surveys.

Table 2–15. Special-Status Plant Survey Area

Project Facility	Survey Area¹
Diversion Dams and Pools	15 feet around the perimeter
Flowlines ²	20 feet on either side
Forebays/Forebay Tank	20 feet around the perimeter
Penstocks	15 feet on either side
Powerhouses and Switchyards	Within and up to 15 feet around the perimeter fence
Transmission, Power, and Communication Lines	25 feet on either side
Gages	10 feet around gages
Project Access Roads	20 feet on either side
Project Trails	15 feet on either side

Project Facility	Survey Area¹
<i>Ancillary and Support Facilities</i>	
Kaweah 1 Powerhouse Campus	Within the developed campus
Repeaters and Solar Panels	15 feet around the perimeter
River Access Parking	10 feet around parking area and beach

NOTES:

1. Survey areas represent locations where potential operation and maintenance activities occur.
2. Footbridges, wildlife bridges, and wildlife escape ramps are located on Project flowlines and would be surveyed concurrently with the flowlines.

Survey Approach

Surveys would be conducted in accordance with *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), or updated CDFW-approved protocols, as appropriate. Surveys would be conducted as follows:

- Field surveys would be conducted at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Generally, this is when the plants are flowering. Based on the blooming periods for plants known or potentially occurring within the Proposed Project vicinity, two surveys would be conducted, one in April and one in June.
- Timing of surveys would be verified based on reference population monitoring. Agencies would be notified of survey population monitoring results and proposed survey dates prior to implementation of surveys.
- Systematic field techniques would be implemented (e.g., zigzag patterns, random meandering, and linear transects) in the study area.
- If a special-status plant species population are identified on the perimeter of the study area, the study area would be expanded to document the full extent of the population.
- Surveys would be floristic in nature and taxonomy would be based on The Jepson Manual (Baldwin et al. 2012). A comprehensive list of species observed during field surveys would be compiled.
- Digital photographs, GPS information, an estimate of the number of individuals present, and a description of associated vegetation alliance would be collected for each special-status plant population observed.

- Moss specimens would be collected and labeled with the date and collection location. Moss specimens would later be identified to species by a qualified bryologist.
- Develop a GIS map of special-status plant populations and overlay information on Proposed Project facilities.
- Prepare and submit California Native Species Field Survey Forms for all special-status plant populations recorded to California Natural Diversity Database (CNDDB).

Avoidance and Protection of Known Populations of Munz's Iris

- SCE would observe a minimum 5-foot protective buffer around known populations of Munz's iris. If vegetation management or other maintenance activities within 5 feet of these populations is necessary for public health and safety, the work would be implemented June through February, outside the plant's sensitive period.

Avoidance and Protection of Other Special-Status Plant Populations

- A minimum 5-foot protective buffer would be established around any special-status plant populations identified during surveys. No maintenance activities that may potentially impact the plants would be implemented within the protective buffer (e.g., vegetation management, road and trail maintenance, and vegetation clearance associated with transmission, power, and communication line maintenance). If maintenance activities are necessary within the buffer to protect public health and safety, alternate measures would be developed in consultation with resource agencies considering the species, location, and nature of work to be implemented.

Consultation and Reporting

Consultation with USFWS, BLM, and CDFW is proposed to identify reference populations and to verify the appropriate timing of special-status plant surveys. Within 2 weeks following completion of the reference population monitoring, the results would be provided to USFWS, BLM, and CDFW along with the proposed timing for completion of surveys. USFWS, BLM, and CDFW would have the opportunity to review the information and provide SCE with any comments within 2 weeks of receipt of the information.

Following completion of surveys, a report summarizing the methods, results, and proposed avoidance and protection measures would be prepared and submitted to USFWS, BLM, and CDFW. A 60-day review period would be provided to the agencies. Within 60 days of the end comment period, comments would be addressed, and the

final report would be distributed by SCE to the agencies (USFWS, BLM, and CDFW) and filed with FERC.

Proposed Project Avian Mortality Monitoring Plan

An Avian Mortality Monitoring Plan (AMMP) is proposed to document injury or electrocution of raptors and other birds on transmission lines, transmission tap lines, and power lines. Table 2–16 provides a list of transmission lines, transmission tap lines, and power lines with one or more design elements that pose a risk for avian electrocution.

Table 2–16. Project Transmission Lines, Transmission Tap Lines, and Power Lines that Pose Risk for Avian Electrocution

Development	Power Distribution Type
Kaweah 1	Powerhouse Transmission Tap Line
Kaweah 2	Powerhouse Transmission Tap Line
Kaweah 3	Powerhouse to Three Rivers Substation Transmission Line
Kaweah 1	Diversion Solar Panel to Kaweah 1 Diversion Dam Power Line
Kaweah 1	Office Building to Kaweah 1 Forebay Tank Power Line
Kaweah 1	Powerhouse Campus Alternate Power Line
Kaweah 1	Switchyard to Kaweah 1 Maintenance Building Power Line
Kaweah 1	Switchyard to Kaweah 1 Office Building Power Line
Kaweah 1	Switchyard to Kaweah 1 Operator’s Office Power Line
Kaweah 1	Switchyard to Kaweah 1 Workshop Power Line
Kaweah 2	Diversion/Flowline Gage and Kaweah 3 Powerhouse Alternate Power Line
Kaweah 2	Powerhouse Alternate Power Line
Kaweah 2	Powerhouse to Kaweah 2 Forebay Power Line
Kaweah 3	Powerhouse to Kaweah 2 Diversion Power Line
Kaweah 3	Powerhouse to Kaweah 2 Flowline Gage Power Line
Kaweah 3	Powerhouse to Kaweah 3 Forebay Power Line

The following proposed measures would be implemented to monitor avian mortality:

- Monitor for avian mortality on Project transmission lines, transmission tap lines, and power lines in conjunction with routine operation and maintenance of the Proposed Project.
 - If an avian mortality is identified, the following data would be obtained and provided to SCE’s Avian Protection Specialist:
 - Location and date
 - Avian species affected
 - Photographs of the pole and adjacent poles, and associated structure numbers.
 - SCE’s Avian Protection Specialist would provide notification within 5 days of the mortality discovery to the following agencies:
 - CDFW
 - USFWS, if the species is federally listed
 - BLM, if the species is a BLM sensitive species and is found on BLM lands

Consultation and Reporting

Preparation of an annual Avian Mortality Monitoring Report is proposed that would document instances of bird electrocution and injury. The Avian Mortality Monitoring Report would be prepared by SCE and distributed to USFWS, BLM, and CDFW by March 1 each year and would allow 30 days for agency review and comment. Within 30 days of the end of the comment period, comments would be addressed, and the final report would be distributed by SCE to the agencies (USFWS, BLM, and CDFW) and filed with FERC.

Proposed Project Wildlife Mortality Monitoring Plan

The purpose of the Wildlife Mortality Monitoring Measure is to monitor wildlife mortality in the Kaweah 2 and Kaweah 3 flowlines, provide for regular maintenance of wildlife protection features, and define a reporting process.

Specifically, monitoring would include:

- Recording wildlife mortality during regular inspections of the Kaweah 2 and 3 flowlines and their associated forebays; and
- Documenting the condition of wildlife bridges, escape ramps, and escape fencing, hazers/flashers during routine operation and maintenance activities and implementing required maintenance activities.

Consultation and Reporting

Preparation of an annual Wildlife Mortality Monitoring Report is proposed that would document monitoring results. The Wildlife Mortality Monitoring Report would be prepared by SCE and distributed to the USFWS and CDFW by March 1 of the year following the annual monitoring period and allow 30 days for agency review and comment. The final Wildlife Mortality Monitoring Report documenting monitoring results, agency comments, and SCE's response to the comments would be filed with the FERC by May 1 each year.

2.3.6 Proposed Project Transmission, Power, and Communication Line Maintenance Measure

The purpose of the Transmission, Power, and Communication Line Maintenance Measure (TPCLMM) is to: (1) define measures to be implemented during pole replacement to reduce the potential for avian electrocution; and (2) specify vegetation clearance activities implemented around Project lines to maintain system reliability. The TPCLMMs include:

- Evaluation of any Project primary transmission line, transmission tap line, or power line involved in the electrocution of a protected raptor to determine the most feasible approach to eliminate the specified mortality risk through retrofitting the structure with raptor-safe equipment or replacing the structure with a raptor-safe pole configuration. The evaluation would be completed in consultation with the appropriate resource agencies (e.g., CDFW, USFWS, and BLM) and agreed upon measures would be implemented by SCE.
- Use of raptor-safe power line design configurations described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) when replacing existing towers, poles, phase conductors, and associated equipment of Project transmission lines. Table 2–17 provides a list of Project transmission lines, transmission tap lines, and power lines with one or more design elements that pose a risk for avian electrocution.
- Conducting vegetation management within 15 feet on either side of Project transmission, power, and communication lines. Vegetation clearance, which consists of vegetation trimming by hand and with equipment, herbicide use, and hazard tree removal, would be conducted consistent with the VIPMP.

Table 2–17. Project Transmission Lines, Transmission Tap Lines, and Power Lines that Pose Risk for Avian Electrocution

Development	Power Distribution Type
Kaweah 1	Powerhouse Transmission Tap Line
Kaweah 2	Powerhouse Transmission Tap Line
Kaweah 3	Powerhouse to Three Rivers Substation Transmission Line
Kaweah 1	Kaweah 1 Diversion Solar Panel to Kaweah 1 Diversion Dam Power Line
Kaweah 1	Kaweah 1 Office Building to Kaweah 1 Forebay Tank Power Line
Kaweah 1	Kaweah 1 Powerhouse Campus Alternate Power Line
Kaweah 1	Kaweah 1 Switchyard to Kaweah 1 Maintenance Building Power Line
Kaweah 1	Kaweah 1 Switchyard to Kaweah 1 Office Building Power Line
Kaweah 1	Kaweah 1 Switchyard to Kaweah 1 Operator’s Office Power Line
Kaweah 1	Kaweah 1 Switchyard to Kaweah 1 Workshop Power Line
Kaweah 2	Kaweah 2 Diversion/Flowline Gage and Kaweah 3 Powerhouse Alternate Power Line
Kaweah 2	Kaweah 2 Powerhouse Alternate Power Line
Kaweah 2	Kaweah 2 Powerhouse to Kaweah 2 Forebay Power Line
Kaweah 3	Kaweah 3 Powerhouse to Kaweah 2 Diversion Power Line
Kaweah 3	Kaweah 3 Powerhouse to Kaweah 2 Flowline Gage Power Line
Kaweah 3	Kaweah 3 Powerhouse to Kaweah 3 Forebay Power Line

2.3.7 Proposed Project Environmental Program

2.3.7.1 *Environmental Training Program*

The purpose of the Environmental Training Program is to educate SCE personnel and contractors (as appropriate) about special-status biological species, avian protection, nesting birds, and cultural resources in the vicinity of the Proposed Project. The Environmental Training Program would be administered annually and includes discussion of the following:

- Photographs, habitat, and life history information for special-status plant and wildlife species that are known to occur or may potentially occur in the vicinity of the Proposed Project;

- Measures to protect special-status plant and wildlife species and their habitats during routine maintenance activities;
- Photographs and life history information for noxious weeds that are known to occur or may potentially occur in the vicinity of the Proposed Project.
- Reporting procedures for discovery of raptor or other bird nests in the vicinity of the Proposed Project;
- Information on cultural resources known or potentially occurring in the Proposed Project area; and
- Measures to protect cultural resources during routine Proposed Project maintenance activities.

The Environmental Training Program is proposed to be reviewed and updated annually, prior to March 1st each year, to account for any changes in resources status.

2.3.8 Proposed Modification to Existing FERC Boundary

The FERC Project boundary would be modified under the Proposed Project to include all lands necessary for operation and maintenance of the Proposed Project, remove lands no longer necessary for operation and maintenance of the Proposed Project (i.e., unused road and communication corridors), and correct known minor errors in the current Exhibit G of the License Application.

The existing FERC Project boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the BLM, and 144.54 acres of SCE-owned or private land. The proposed FERC Project boundary would encompass 314.82 acres, including 171.29 acres of public lands administered by the BLM and 143.53 acres of SCE-owned or private land. The net change is a decrease of 5.98 acres.

SCE is currently working with landowners that are affected by the boundary modifications to obtain approval to conduct surveys and reach agreement on terms of the modifications. Accurate survey information for the proposed new FERC Project boundary is not available at this time (SCE 2019, Volume 3, Exhibit E, Section 4.1). A tentative boundary is proposed. Figure 2–7 shows both the existing and proposed FERC boundary.

Once complete or within 45 days of the date of issuance of the license, whichever occurs first, SCE would file a complete set of revised Exhibit G drawings in accordance with FERC regulations.

2.3.9 Proposed Facility Enhancements

Under the Proposed Project, the description of existing facilities provided in the Existing Project (Section 2.2.2) remains unchanged. However, at the Kaweah 2 Powerhouse River Access Parking Area, two recreation enhancements are included in the Proposed Project namely, the addition of a trash receptacle and Porta-Potty within the footprint of the existing parking area.

2.3.10 Proposed Additional Project Maintenance

Under the Proposed Project, routine inspection and maintenance activities would continue to be implemented as described in Section 2.2.3 with the following exceptions:

- *Road and Trail Maintenance*: The Proposed Project includes additional agency consultation and annual reporting requirements with BLM, Tulare County, and FERC, as appropriate, associated with road and trail maintenance activities.
- *Ancillary Facility Maintenance*: The Proposed Project includes installation of a trash receptacle and Porta-Potty at the Kaweah 2 Powerhouse River Access Parking Area. These two features would require additional maintenance at the parking area.
- *Powerhouse Maintenance*: The Proposed Project includes implementation of measures to protect day-roosting special-status bats in the Kaweah 2 Powerhouse, Kaweah 3 Powerhouse, and the Kaweah 1 Campus maintenance building if painting or power washing the interior walls occurs at or near the roost site.
- *Vegetation Management*: The Proposed Project includes implementation of measures to reduce the spread or introduction of noxious weeds, measures to protect special-status plants, and additional consultation and annual reporting requirements with BLM, Tulare County, and FERC, as appropriate.

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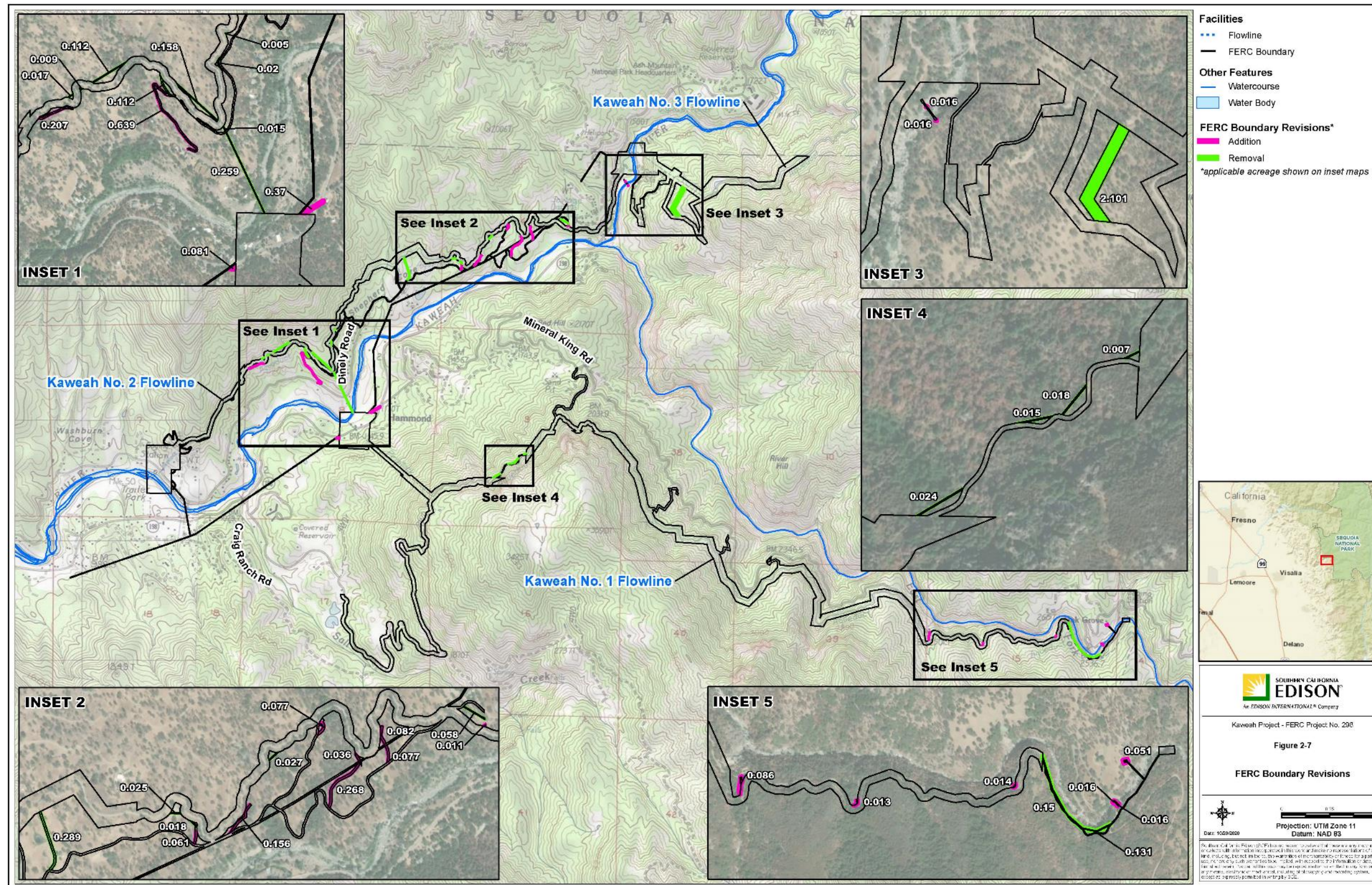


Figure 2-7 FERC Boundary Revisions

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3 Environmental Checklist

3.1 Introduction

This chapter incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines. Each resource topic section includes a description of the environmental and regulatory setting, an explanation of the checklist's impact questions, and any required mitigation measures.

In addition, each section discusses SCE's proposed and existing measures and plans intended to minimize impacts and assesses whether CEQA mitigation is required.

SCE's measures and plans have been incorporated into the Proposed Project that is before the State Water Board for certification. Refer to Chapter 2 for additional Proposed Project information.

3.2 Evaluation of Environmental Impacts

Each resource area is evaluated against the significance criteria provided by CEQA Appendix G²⁶ and each impact is assigned a level of significance. The varying levels of significance are defined as:

- **No Impact:** This finding is made when the analysis concludes that the Proposed Project would not affect a particular environmental resource or issue.
- **Less than Significant:** This finding is made when the analysis concludes that the Proposed Project would have no substantial adverse environmental impact and no mitigation is needed.
- **Less than Significant with Mitigation Incorporated:** This finding is made when the analysis shows that the Proposed Project would have no substantial adverse environmental impact with inclusion of the mitigation measure described, thereby reducing an otherwise potentially significant impact to less than significant.
- **Potentially Significant:** This finding is made when the analysis concludes that the Proposed Project could have a substantial adverse effect on the environment. This finding is appropriate when mitigation does not reduce the severity of the effect to less than significant.

²⁶ Revised December 28, 2018.

- **Mitigation:** Mitigation refers to specific measures or activities to avoid or reduce the severity of potentially significant impacts, or compensate for potentially significant impacts associated with implementation of the Proposed Project.
- **Cumulative Impact:** Cumulative impacts are impacts that potentially could occur when a change in the environment results from the incremental impact of the Proposed Project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant impacts of the Proposed Project.

3.2.1 Aesthetics

Except as provided in Public Resources Code section 21099, subd. (d) (which provides that aesthetic impacts shall not be considered significant for qualifying residential, mixed-use residential, and employment center projects on infill sites within transit priority areas):

Environmental Issues	Impact Determination
a. Would the Proposed Project have substantially adverse effect on a scenic vista?	No Impact
b. Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
c. Would the Proposed Project in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less than Significant Impact
d. Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No Impact

3.2.1.1 *Applicant Proposed Measures*

The Proposed Project does not include any environmental measures or plans that specifically address aesthetics impacts.

3.2.1.2 *Environmental Setting*

The Proposed Project is situated in the foothills and mountainous uplands of the western slope of the southern Sierra Nevada. All of the existing facilities are located along the Kaweah River upstream of the community of Three Rivers, and on the East Fork Kaweah River, a tributary to the Kaweah River, on private lands or on public lands administered by the BLM. Lake Kaweah, owned and operated by the U.S. Army Corps of Engineers (USACE), is located southwest of the Proposed Project site, approximately 5 river miles downstream of the Kaweah 2 Powerhouse. SNP and the Sequoia-Kings Canyon Wilderness Area are located immediately north and east of the Proposed

Project site, and the John Krebs Wilderness Area is located southeast of the Proposed Project site.

Proposed Project facilities are accessible via State Route (SR) 198, which parallels the Kaweah River, and Mineral King Road, which parallels the East Fork Kaweah River. These two roadways also serve as the primary access routes into the SNP, Sequoia-Kings Canyon and John Krebs wilderness areas. SR 198 is not currently identified as a State Scenic Highway as defined by the California Department of Transportation (Caltrans 2019). However, designating SR 198 as a State Scenic Highway is a priority project for Tulare County (Tulare County 2018).

Representative photographs of the existing Project facilities and surrounding landscape are included in Appendix 7.11–A, Photos A–3 through A–16 of the SCE’s License Application, Volume 3, Exhibit E (SCE 2019). All of the existing Project facilities that are readily visible from public viewing locations were systematically evaluated in 1989 as part of the previous relicensing effort. The results of that study are documented in the Kaweah Hydroelectric Project Visual Resources Report (KEA 1989), which is provided in Appendix 7.11–B for reference in Kaweah Project FERC EIS (SCE 2019). Proposed Project facilities have not been substantially altered since the 1989 assessment. Therefore, the Proposed Project facilities and features that were assessed in 1989 were not reassessed as part of the current relicensing effort.

The land encompassing the existing Project facilities is rural in nature and sparsely populated, especially along the East Fork Kaweah River. With approximately 2,200 people, the largest population center in the vicinity of the Proposed Project is the community of Three Rivers. The community of Hammond is located near the confluence of the Kaweah River and the East Fork Kaweah River. The community of Oak Grove is located in the immediate vicinity of the Kaweah 1 Diversion and associated structures. Individual homes are scattered throughout the Kaweah River Valley, particularly in the lower foothills.

The landscape is dominated by the Kaweah River and its tributaries. At lower elevations, near Lake Kaweah, the landscape is a relatively level floodplain with well-defined stream terraces, typical of the Sierra Nevada foothills. Vegetation consists primarily of oak and grass communities. Oak species vary from evergreen to deciduous, and on the drier slopes, chamise evergreen shrub dominates. Eastward, the landscape transitions to narrow drainages flanked by steeply sloping hillsides. Granite outcrops are common. At higher elevations the landscape is characterized by steep canyons and rugged terrain with dense forests and woodlands.

The Kaweah River and its tributaries flow continuously throughout the year and support a wide diversity of riparian vegetation. The scenic quality in the Proposed Project vicinity is enhanced with flowing water and wetland vegetation, and in areas where the high

snowcapped mountains of the Sierra Nevada are visible. However, aside from rapids and granite outcrops, there are no significant natural features or other scenic attractions in the immediate vicinity of the existing Project.

Although none of the Proposed Project facilities are located within the boundaries of the SNP, some are visible from select locations within the SNP. Specifically: the Kaweah 2 Diversion Dam/Intake and the Kaweah 3 Powerhouse switchyard, are visible from pullouts located on SR 198, near the SNP boundary; and the edge of the Kaweah 3 Forebay and the slope below the Forebay are visible from the Indian Head River Trailhead Parking Area and the Foothill Visitor Center, both developed recreation facilities located within the SNP.

3.2.1.3 Regulatory Setting

The following summarizes relevant visual resource direction contained in the BLM, Tulare County, and NPS management plans.

BLM Bakersfield Office RMP

The BLM's Bakersfield Office Approved Resource Management Plan (RMP) (BLM 2014) provides broad-scale direction for the future management of BLM-administered public lands and resources located in an eight county region of southern-central California, including the Proposed Project area. The Visual Resources section of the RMP contains the following goal, objective, and direction regarding administrative actions that pertain to the Proposed Project area:

- **Goal VR-G-1.** Public lands demonstrate a range of visual resource values that allow for development and provide opportunities for scenic appreciation.
- **Objective VR-O-1.** Utilize visual resource management classes for all public lands within the decision area to preserve and enhance scenic quality for present and future generations.
- **Administrative Actions.** For all surface-disturbing projects or activities, regardless of size of potential impact, incorporate visual design considerations, consistent with the Visual Resource Contrast Rating Manual H-8431-1, to meet Visual Resource Management (VRM) class objectives of the area.

As shown on Figure 2–1, most of the Proposed Project facilities are located on private land that is surrounded by public land managed by the BLM. Most of the BLM land surrounding the Proposed Project facilities is designated Class II. The exceptions are the Kaweah 2 Diversion Dam and the Kaweah 3 Powerhouse, which are located in an area with a Class III VRM designation. The visual management objectives associated with these two BLM classifications are summarized below.

- **Class II Objective.** The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **Class III Objective.** The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

As part of the Kaweah Project FERC EIS (SCE 2019), existing Project facilities were mapped relative to the BLM's VRM classifications using Geographic Information System (GIS) data provided by the BLM on July 11, 2018 and identified that most of the facilities are located on private land.

Sequoia and Kings Canyon General Management Plan

The Sequoia and Kings Canyon General Management Plan (NPS 2006) does not contain specific VRM objectives that pertain to the Proposed Project. In general, the plan emphasizes protection of natural resources and scenic river corridors.

Tulare County General Plan and Three Rivers Community Plan

The Tulare County General Plan includes two sections containing visual resource direction relevant to the Proposed Project: Watercourses and Gateway to the Sequoias. In the Watercourses section, the plan specifies the importance of, "maintaining the rural and natural character of landscape viewed from trails and watercourses used for public recreation". In the Gateways to the Sequoias section, which includes State Highway 198, the plan states the importance of, "protecting primary viewsheds from development" (Tulare County 2012).

The Proposed Project is located in an area that is managed in accordance with the direction contained in the Three Rivers Community Plan 2018 Update. This plan highlights the importance of maintaining the visual quality of the view along SR 198 and designing structures and developments with an emphasis on preserving the scenic panorama.

According to the Community Plan, designating SR 198 as a State Scenic Highway is a priority project for Tulare County. As such, the Community Plan provides a detailed inventory of the scenic resources and conditions along SR 198 as background

information to facilitate the process of nominating SR 198 as a State Scenic Highway. The inventory begins downstream of Lake Kaweah and ends near the SNP boundary, just upstream of the East Fork Kaweah River confluence. The inventory is divided into three distinct segments, with the Proposed Project facilities falling within Segments 2 and 3. The inventory does not identify the Proposed Project facilities by name but mentions a “power generating facility” near the upper end of Segment 2, “historic power station water flumes” “clinging to the hillside”, and two power plants in Segment 3. Overall, the inventory depicts the Proposed Project facilities as historically important features in the Kaweah River landscape.

3.2.1.4 Discussion

a. Would the Proposed Project have substantially adverse effect on a scenic vista?

Impact: No Impact

The Proposed Project is the renewal of SCE’s current license for a term of a proposed 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. The Proposed Project does not include any new facilities or new land uses that could adversely affect a scenic vista.

The Proposed Project would increase the MIF releases during certain times of the year to better mimic the natural hydrology of the river, which could have a beneficial impact on visual resources since it would maintain water flows in the Kaweah River. The addition of the Porta-Potty and trash receptacle at the existing Kaweah 2 Powerhouse River Access Parking Area would be visible, but this area is currently developed and the area is not considered a scenic vista. As a result, the Proposed Project would not adversely affect a scenic vista. No impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact: No Impact

There are no designated scenic highways in the Proposed Project area. The Tulare County General Plan and Three Rivers Community Plan identify that SR 198 should be considered a priority project for the State Scenic Highway program. The

Proposed Project does not involve the addition of any above-ground features that would be visible from SR 189. Although tree removal would occur as part of implementing the VIPMP, the loss would be considered minor and would not significantly affect the amount or number of trees in the Proposed Project area. Additionally, the Proposed Project does not include any new uses that could damage scenic resources. No impact would occur.

Mitigation Measures: None Required.

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

Impact: Less Than Significant

The Proposed Project area is dominated by the Kaweah River and its tributaries, and surrounding forested and grazing lands. The Proposed Project is located on private lands and on public lands administered by the BLM.

Modified Minimum Instream Flow Releases

The current FERC license requires release of MIFs below the Kaweah 1 and Kaweah 2 diversion dams according to a schedule that varies by month and water year type. Under the Proposed Project, maximum diversion of water from the Kaweah River and East Fork Kaweah River would be the same as existing conditions (diversions of up to 87 cubic feet per second [cfs] at Kaweah 2 Diversion and 24 cfs at Kaweah 1 Diversion). The proposed Instream Flow Measure (IFM) provides higher MIFs in the bypass reaches during some select dry months and water year types. The modified MIF releases would result in higher water levels in the Kaweah River during September of normal water years and during January, February, July, and December of dry water years compared to existing conditions. On the East Fork Kaweah River, modified instream flow releases would result in higher flows during all months of normal water years compared to existing conditions. Higher instream flows would maintain and/or improve riparian vegetation in the Kaweah River and East Fork Kaweah River. Proposed increased MIF modifications could improve scenic and wilderness values of the Kaweah River since water flows would be maintained at a more natural hydrograph.

The proposed IFM would prioritize water for SCE's water delivery obligations. The IFM explicitly changes MIF requirements to stipulate that in the event that natural

inflow into the Kaweah 1 Diversion or Kaweah 2 Diversion is insufficient to meet both the MIF releases and SCE's water delivery obligations, the MIF release becomes the natural inflow minus 1 cfs and 3 cfs for Kaweah 1 and 2, respectively. During low-runoff periods, water is diverted and delivered to local water users, but no water is diverted for generation purposes. The proposed IFM would be limited to periods of time in which there is insufficient water to meet SCE's water delivery obligations and MIFs, and would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. During other times of the year, the Proposed Project would increase the MIF releases to better mimic the natural hydrology of the river, which could have a beneficial impact on visual resources since it would maintain water flows in the Kaweah River. Though the Proposed Project at times may reduce MIFs for water deliveries, overall the Proposed Project includes additional MIFs to enhance the river system's visual aspects. Therefore, increasing the MIFs and improving riparian vegetation would enhance overall visual quality along both the Kaweah River and East Fork Kaweah River.

Spills from the Kaweah 3 Forebay

The short segment of the Kaweah 3 Flowline included in the Proposed Project consists of a 2,975-foot long concrete box flume that terminates at the Kaweah 3 Forebay, which is an embankment forebay with a capacity of approximately 11 ac-ft. Under existing conditions, in the event of an unplanned powerhouse outage, overflow from the Kaweah 3 Forebay is directed down slope through an approximately 75-foot long concrete-lined spillway chute that begins at the upstream end of the forebay and terminates at a natural channel. The channel drains to the Kaweah River within the SNP.

Per the request of the NPS, visual conditions at the natural channel under "no-spill" and near-maximum spill (92 cubic feet per second [cfs]) scenarios as viewed from the Foothill Visitor Center Picnic Area were documented on May 31, 2018.

As documented in the License Application (Volume 3, Exhibit E Supporting Document A, LAND 2 – TSR), the natural channel (referred to as the East Spillway Channel in the LAND 2 – TSR) is not visually discernable from the Foothill Visitor Center Picnic Area under the no-spill condition, mainly due to the viewing angle, and the long viewing distance between the visitor center and the natural channel. Conversely, the natural channel is visible from the Foothill Visitor Center Picnic Area under the maximum spill scenario due to the contrast between the white color of the water relative to the adjacent vegetation and the linear nature of the natural channel. However, overall the contrast rating is considered "weak" due to the long viewing distance between the natural channel and the viewing area, and because the vegetation along the channel disrupts the linear nature of the channel, thereby

reducing overall visual contrast. In general, with a flow of 92 cfs, the channel appears as a natural waterfall. Lower flows would be less discernable. Therefore, visual changes related to spills from the Kaweah 3 Forebay would not be considered significant.

Recreation Enhancements

The installation of recreation enhancements would be visible at the Kaweah 2 Powerhouse River Access Parking Area, but the addition of the facilities would not substantially degrade the existing visual character since the site is already developed. In addition, the Proposed Project does not involve any new above-ground features that could degrade the existing visual quality or public views in the area surrounding the Proposed Project. However, SCE may be required by FERC to comply with BLM's preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, construction of new fencing is not anticipated to substantially degrade the existing visual quality or public views of the site and its surroundings since it would be replacing existing degraded structures. The water trough would be a new visual element in the area. However, since it relates to the ongoing cattle grazing it would not be visually incompatible with the existing environment. In addition, views of the tank from residences would be limited due to existing vegetation.

Therefore, the Proposed Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

Mitigation Measures: None Required.

- d. Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

Impact: No Impact

The Proposed Project does not include the development of any new light or glare sources that could adversely affect day or nighttime views in the area. Therefore, no impact would occur.

Mitigation Measures: None Required.

3.2.2 Agricultural and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation (DOC) 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.

Environmental Issues	Impact Determination
a. Would the Proposed Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b. Would the Proposed Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c. Would the Proposed Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
d. Would the Proposed Project result in the loss of forest land or conversion of forest land to non-forest use?	Less than Significant Impact

Environmental Issues	Impact Determination
e. Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	No Impact

3.2.2.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address agricultural and forest impacts; however, the proposed VIPMP would lessen tree removal to the extent possible, as discussed below.

3.2.2.2 Environmental Setting

The Proposed Project is located approximately 2 miles from the community of Three Rivers in a rural foothill area, with dispersed residences along the main roadway (State Route 198). Surrounding the residential areas is open space used for livestock grazing, as well as recreation. Land within and adjacent to the FERC Project boundary is not used or zoned for forestry purposes. Some land is zoned and used for agricultural purposes, specifically livestock grazing (Tulare County 2020).

The existing FERC boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the Bureau of Land Management (BLM) and 144.54 acres of SCE-owned or private land. The BLM land supports grazing activities. BLM and/or private landowners have constructed fences to contain the livestock. SCE maintains one fence, Kaweah 3 Forebay Fence, to prevent cattle from grazing in this area and subsequently causing erosion near the spillway.

3.2.2.3 Discussion

- a. **Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project involves minor land use modifications, including small scale recreation enhancements and FERC boundary modifications. Based on the Farmland Mapping and Monitoring Program (FMMP), land within the FERC boundary is classified as Non-agricultural and Natural Vegetation, Grazing Land, Rural Residential Land, and Urban and Built-Up Land (DOC 2016). The Proposed

Project does not include any development that would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, no impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Impact: No Impact

The Proposed Project area includes land zoned for agricultural purposes (Tulare County 2020). The portion of the Proposed Project area that includes the Kaweah 2 Powerhouse and Kaweah 2 Forebay is designated Williamson Act – Open Space land (Tulare County 2014). The purpose of this designation is to protect open space habitat from subdivision and development (DOC 2020).

The Proposed Project would not result in any new construction or land uses that would conflict with existing agricultural or open space uses. No changes in existing zoning or land use designations are proposed. The Proposed Project would continue to support existing grazing. However, SCE may be required by FERC to comply with BLM’s preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, construction of new fencing and water trough would support existing grazing.

Therefore, since there would be no changes to existing land uses or designations, and no new development, with exception of the potential BLM fencing and trough, the Proposed Project would maintain consistency with both the Tulare County agricultural zoning requirements and Williamson Act – Open Space land restrictions. No impact would occur.

Mitigation Measures: None Required.

- c. Would the Proposed Project 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))?**

Impact: No Impact

The Proposed Project area does not include any land zoned as forest land, timberland, or Timberland Production (Tulare County 2020). Therefore, the Proposed Project would have no impact related to zoning for, or cause rezoning of, forest land, timberland, or Timberland production. No impact would occur.

Mitigation Measures: None Required.

- d. Would the Proposed Project result in the loss of forest land or conversion of forest land to non-forest use?**

Impact: Less than Significant

The Proposed Project would implement a VIPMP to maintain access to and protect Project facilities and provide for worker/public health and safety. Activities would include hazard tree removal at existing facilities on an as-needed basis. Refer to Table 2–15 for the locations where vegetation and pest management activities would be implemented.

Tree removal would occur; however, the loss would be considered minor and would not significantly affect tree resources. In addition, the VIPMP includes annual consultation and reporting with BLM and/or Tulare County regarding proposed vegetation management activities, including the method, location, and timing of activities to be implemented. As part of the coordination meeting, BLM and/or Tulare County and SCE will review proposed BMPs and measures and modify/update, as appropriate, for the protection of environmental resources, including tree resources.

Although the Proposed Project would result in tree removal as part of the VIPMP, the Proposed Project area does not include any land zoned as forest land. In addition, annual coordination with BLM and/or the County would be conducted to ensure the VIPMP is implemented appropriately. Therefore, the Proposed Project would have a less than significant impact related to the loss of forest land or conversion of forest land to non-forest use.

Mitigation Measures: None Required.

- e. **Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project would not result in any new construction or land uses that would conflict with existing agricultural uses. No changes in existing zoning or land use designations are proposed. The Proposed Project would continue to support existing grazing. Although hazard trees would be removed as needed, the Proposed Project area does not contain land designated as forest. Therefore, the Project would not change the existing environment such that it would result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures: None Required.

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3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.

Environmental Issues	Impact Determination
a. Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant Impact
b. Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	Less than Significant Impact
c. Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact
d. Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact
<i>Are significance criteria established by the applicable air district available to rely on for significance determinations?</i>	YES

3.2.3.1 *Applicant Proposed Measures*

The Proposed Project does not include any environmental measures or plans that specifically address air quality impacts.

3.2.3.2 *Environmental Setting*

Federal and State

The USEPA is responsible for implementing most aspects of the federal Clean Air Act (CAA), including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric ozone (O₃) protection measures, and enforcement provisions. NAAQS are established for the six criteria air pollutants under the CAA: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead.

The federal CAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. The NAAQS and the CAAQS have been developed to protect human health and represent the maximum acceptable concentrations of air pollution. The state and federal Ambient Air Quality Standards (AAQS) are presented in Table 3–1 below.

Table 3–1. Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b Primary ^c	NAAQS ^b Secondary ^d
Ozone (O ₃) ^e	1 hour	0.09 ppm	—	—
Ozone (O ₃) ^e	8 hours	0.070 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	0.100 ppm	—
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	0.075 ppm	—
Sulfur Dioxide (SO ₂)	3 hours (secondary) ¹	—	—	0.5 ppm
Sulfur Dioxide (SO ₂)	24 hours	0.04 ppm	0.14 ppm (for certain areas)	—
Sulfur Dioxide (SO ₂)	Annual arithmetic mean	—	0.030 ppm (for certain areas)	—
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	—
Carbon Monoxide (CO)	8 hours	9.0 ppm	9 ppm	—
Carbon Monoxide (CO)	Lake Tahoe (8-hr)	6 ppm	—	—

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b Primary ^c	NAAQS ^b Secondary ^d
Respirable Particulate Matter (PM ₁₀) ^f	24 hours	50 µg/m ³	150 µg/m ³	150 µg/m ³
Respirable Particulate Matter (PM ₁₀) ^f	Annual Arithmetic Mean	20 µg/m ³	—	—
Fine Particulate Matter (PM _{2.5}) ^f	24 hours	—	35 µg/m ³	
Fine Particulate Matter (PM _{2.5}) ^f	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³	15 µg/m ³
Lead ^{h, i}	30-day Average	1.5 µg/m ³	—	—
Lead ^{h, i}	Calendar Quarter	—	1.5 µg/m ³ (for certain areas)	1.5 (for certain areas)
Lead ^{h, i}	Rolling 3-Month Average	—	0.15 µg/m ³	0.15 µg/m ³
Sulfates ^g	24 hours	25 µg/m ³	—	—
Hydrogen Sulfide	1 hour	0.03 ppm	—	—
Vinyl Chloride ^h	24 hours	0.01 ppm	—	—
Visibility Reducing Particles	8 hours	See footnote j	—	—

Source: CARB 2016.

Notes: µg/m³ = microgram(s) per cubic meter
 — = no standard has been adopted
 ppm = part(s) per million

- a. CAAQS for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.
- b. NAAQS (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one.

For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

- c. NAAQS Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- d. NAAQS Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- e. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- f. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- g. On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked.
- h. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- i. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average.
- j. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Local

The Proposed Project is located on the southeast side of San Joaquin Valley Air Basin (SJVAB). The summer months are characterized by winds dominantly blowing from the northwest with secondary winds, typically occurring during the night, blowing from the southeast. Winter months have significantly less air movement, aside from storm events, with many days having little to no wind and stagnant conditions. Inversion layers during the summer months are typically found between 2,000- and 2,500-foot elevations while during the winter months the inversion layer is commonly much lower between 500- and 1,500-foot elevations. The Proposed Project lies at the base of the western side of the Sierra Mountain Range with the majority of the area between 1,000-and 2,500-foot elevations (SJVAPCD 2015).

The dominant anthropogenic sources of air pollution in Tulare County are mobile sources, contributing volatile organic compounds (VOCs), CO, PM, and NOx, and agricultural sources, contributing VOCs and PM. VOCs are also generated from natural processes in plants and trees (Tulare County 2012). Ground level O₃ is created from NOx and VOCs when exposed to sunlight and inversion layers can cause increased pollutant levels by trapping pollutants in the air basin.

The San Joaquin Valley Air Pollution Control (SJVAPCD) district manages the SJVAB which stretches over eight counties including Tulare County on the southeast edge of the air district. The SJVAPCD is required through State and federal regulations to monitor and report air quality data, such as criteria pollutants and other pollutants that are included in the CAAQS and NAAQS. Table 3–2 shows the current attainment statuses of the SJVAPCD in regards to the CAAQS and NAAQS.

Table 3–2. San Joaquin Valley Attainment Designations

Criteria Pollutants	Federal Attainment Designation	State Attainment Designation
Ozone (O ₃) – 1 hour	n/a	Nonattainment/Severe
Ozone (O ₃) – 8 hour	Nonattainment/Extreme	Nonattainment
Coarse Particulate Matter (PM ₁₀)	Attainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment	Nonattainment
Nitrogen Dioxide (NO ₂)	Attainment/Unclassified	Attainment

Criteria Pollutants	Federal Attainment Designation	State Attainment Designation
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Sulfur Dioxide (SO ₂)	Attainment/Unclassified	Attainment
Sulfates	n/a	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	n/a	Unclassified
Visibility Reducing Particles	n/a	Unclassified

Source: SJVAPCD 2015, CARB 2019.

For the CAAQS the SJVAPCD is designated “Nonattainment/Severe” for 1-hour O₃ and “Nonattainment” for 8-hour O₃, PM₁₀, and PM_{2.5}. For the NAAQS the SJVAPCD is designated “Nonattainment/Extreme” for the 8-hour O₃ and “Nonattainment” for PM_{2.5}.

Per EPA regulations, the SJVAPCD must develop Air Quality Attainment Plans for those pollutants with nonattainment status. These documents lay out a framework with measures and policies to reduce those pollutants to achieve attainment. SJVAPCD also has around 650 rules to support these plans and emission reductions (SJVAPCD 2015).

The SJVAPCD maintains a network of monitoring stations around the air district to gather and report data on criteria pollutants. There are also various monitoring stations maintained by CARB or the NPS. The closest monitoring stations to the Project are Lower Kaweah and Ash Mountain, which are both maintained by the NPS. Both stations measure meteorological data, but they do not perform measurements of all criteria pollutants. The Lower Kaweah station only measures O₃ and Ash Mountain measures O₃ and PM_{2.5}.

The Tulare County General Plan lays out policies to reduce and mitigate air pollution in Section 9 – Air Quality. It states that the County will coordinate their efforts with local jurisdictions, such as the SJVAPCD and state and federal agencies to enforce applicable air quality plans and work toward attainment of CAAQS and NAAQS. Additional policies specify that best available control measures (BACM) should be implemented to minimize air pollution and maintain high visibility toward the mountains (Tulare County 2012).

The SJVAPCD has approved CEQA significance thresholds. These thresholds can be used to assess air quality impacts of applicable discretionary actions. Tables 3–3 and 3–4 list the SJVAPCD Thresholds of Significance for criteria pollutants and air toxics (SJVAPCD 2017).

Table 3–3. San Joaquin Valley Air Pollution Control District Threshold of Significance – Criteria Pollutants

Pollutant/ Precursor	Construction Emissions (tons/year)	Operational Emissions Permitted Equipment and Activities (tons/year)	Operational Emissions Non-Permitted Equipment and Activities (tons/year)
CO	100	100	100
NO _x	10	10	10
VOC	10	10	10
SO _x	27	27	27
PM ₁₀	15	15	15
PM _{2.5}	15	15	15

Source: SJVAPCD 2017.

Table 3–4. San Joaquin Valley Air Pollution Control District Threshold of Significance – Toxic Air Contaminants

Toxic Air Contaminant	Threshold
Carcinogens	Maximally Exposed Individual ²⁷ risk equals or exceeds 20 in one million
Non-Carcinogens	Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
Non-Carcinogens	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Source: SJVAPCD 2015.

²⁷ Maximally Exposed Individual refers to the single individual with the highest exposure in a given population.

3.2.3.3 Discussion

a. Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?

Impact: Less than Significant

SJVAPCD applicable air quality plans include the 2016 Ozone Plan, 2020 Reasonable Available Control Measures (RACT) Demonstration for 2015 8-Hour Ozone Standard, and the 2018 Plan for PM_{2.5} Standards. The above plans focus on reducing ozone precursors, NO_x and VOCs, and PM_{2.5} (SJVAPCD 2018).

The Proposed Project would not involve any construction or new stationary sources. Maintenance trips associated with the recreation enhancements and special-status bat species protection would be incorporated into the existing maintenance schedule. Ongoing facility, trail, and road maintenance and vegetation management activities are existing and these emissions are not new to the Proposed Project. No additional vehicle trips are anticipated (SCE 2021).

However, SCE may be required by FERC to comply with BLM's preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, construction of new fencing and water trough would cause a temporary increase in emissions from construction vehicle trips.

Though no additional trips are anticipated, if additional trips are later determined to be necessary there is the potential for increased emissions. These trips would be minimal and for maintenance of the recreation enhancements at the Kaweah 2 Powerhouse River Access Parking Area and to ensure protection of the special-status bat species during periodic maintenance at the Kaweah 2 Powerhouse, and if required vehicle trips associated with construction of fencing and water trough. Vehicle trips also generate ozone precursors, NO_x and VOCs, and PM₁₀. While the SJVAPCD is in nonattainment for both the State and federal AAQS for ozone and the State AAQS for PM₁₀, the emissions from potential additional trips would be negligible and, thus, the Proposed Project would not significantly increase emissions. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plans.

Mitigation Measures: None Required.

b. Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Impact: Less than Significant

As mentioned above the SJVAPCD is in nonattainment for the CAAQS of PM₁₀, PM_{2.5}, and O₃. For the NAAQS, the SJVAPCD is in nonattainment for O₃ and PM_{2.5} (CARB 2019). The SJVAPCD has developed significance threshold for criteria pollutants, which will be used in this discussion to determine if a net increase of criteria pollutants is cumulatively considerable.

The Proposed Project does not include any new construction or stationary emission sources. Maintenance trips associated with the recreation enhancements and special-status bat species protection would be incorporated into the existing maintenance schedule. No additional vehicle trips are anticipated (SCE 2021). Potential emissions from the Proposed Project are dominantly, NO_x, VOCs, and PM₁₀ from mobile sources involved in maintenance activities. These emissions are existing and not newly proposed.

Though no additional trips are anticipated, if additional trips are later determined to be necessary there is the potential for increased emissions. These trips would be minimal and for maintenance of the recreation enhancements at the Kaweah 2 Powerhouse River Access Parking Area and to ensure protection of the special-status bat species during periodic maintenance at the Kaweah 2 Powerhouse, and if required, vehicle trips associated with construction of fencing and water trough (refer to Chapter 2 in this document).

While the SJVAPCD is in nonattainment for PM₁₀, PM_{2.5}, and O₃, the Proposed Project is not expected to generate negligible emissions and therefore, would not exceed the 10 tons/year significance thresholds for NO_x and VOCs and the 15 tons/year threshold for PM₁₀. The Proposed Project would not result in a significant cumulative increase of nonattainment criteria pollutants.

Mitigation Measures: None Required.

c. Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

Impact: Less than Significant

Sensitive receptors located within the vicinity of the Proposed Project include private residences along the Kaweah River, public recreation facilities, and an existing preschool. The Three River Kids Preschool is located approximately 0.10 mile from

existing transmission lines, and approximately 0.25 mile from the existing Kaweah 2 Powerhouse. There are no changes proposed to the transmission lines.

The Proposed Project includes minor modifications to the existing maintenance plan of the Kaweah 2 Powerhouse to protect special-status bat species. These minor maintenance modifications would be incorporated into the existing maintenance regime and would not require additional vehicle trips (SCE 2021).

Though no additional trips are anticipated, if additional trips are later determined to be necessary there is the potential for increased emissions. These trips however, would be minimal and for maintenance of the recreation enhancements at the Kaweah 2 Powerhouse River Access Parking Area and to ensure protection of the special-status bat species during periodic maintenance at the Kaweah 2 Powerhouse, and if required, vehicle trips associated with construction of fencing and water trough.

None of these activities are sources of significant pollutant emissions, and therefore, would not expose nearby sensitive receptors to substantial pollutant concentrations. Therefore, the Proposed Project would have a less than significant impact related to exposure of pollutant concentrations to sensitive receptors.

Mitigation Measures: None Required.

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

Impact: No Impact

The Proposed Project is the renewal of SCE's current license for a proposed term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. The Proposed Project does not include any processes, such as waste treatment or livestock operations, that would produce odorous emissions.

The Proposed Project does include installation of a trash receptacle and Porta-Potty at the Kaweah 2 Powerhouse River Access Parking Area. Periodic odors associated with these facilities would be localized and not affect a substantial number of people. Further, the current maintenance schedule is intended to reduce odors from these facilities. Therefore, no impacts would occur related to odors or other emissions that could affect a substantial number of people.

Mitigation Measures: None Required.

3.2.4 Biological Resources

Environmental Issues	Impact Determination
a. Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	Less than Significant with Mitigation Incorporated
b. Would the Proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	Less than Significant with Mitigation Incorporated
c. Would the Proposed Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact
d. Would the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than Significant Impact
e. Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f. Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact

3.2.4.1 Applicant Proposed Measures

To address potential impacts to biological resources, the Applicant has proposed resource protection measures, and environmental management and monitoring plans as summarized below. Detailed descriptions of proposed plans and measures are found in Chapter 2, Section 2.3 Proposed Project.

Instream Flows and Ramping Rates

Under the Proposed Project, maximum diversion of water from the Kaweah River and East Fork Kaweah River would be the same as existing conditions (diversions of up to 87 cubic feet per second [cfs] at Kaweah 2 Diversion and 24 cfs at Kaweah 1 Diversion). The proposed IFM provides higher MIFs in the bypass reaches during some select dry months and water year types. As a result of the increased MIFs, less water would be diverted and more water would remain in the Kaweah River and East Fork Kaweah River. The modified MIFs would slightly improve summer/fall low-flow season water temperatures in the Kaweah River and East Fork Kaweah River compared to existing conditions (see Section 3.2.10, Hydrology and Water Quality for more information).

MIF and Prioritization of Water Deliveries

The Proposed Project includes an IFM that would preserve water for water deliveries along the flowlines explicitly, whereas historically minimum flow modification/variances were required (refer to Section 2.2.4 Existing Project Operations). The IFM explicitly changes MIF requirements to stipulate that in the event that natural inflow into the Kaweah 1 Diversion or Kaweah 2 Diversion is insufficient to meet both the MIF releases and SCE's contractual water delivery obligations, the MIF release becomes the natural inflow minus 1 cfs and 3 cfs for Kaweah 1 and 2, respectively.

Water Temperature Monitoring Plan

A WTMP is proposed to periodically document water temperature and meteorological conditions in the bypass reaches²⁸ and comparison reaches. This information would be compared to historical water temperature data collected during the relicensing study (AQ 4 – Water TSR; Supporting Document A of the License Application). Water temperature monitoring would occur from April 1 through October 31 to coincide with spring runoff and summer months when water temperatures are of most concern to aquatic species. The water temperature monitoring sites would be visited and data

²⁸ A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach. Typically, the diverted water re-enters the river through a powerhouse at the downstream end of the bypass reach.

downloaded after high flows have declined, approximately June, and in October at the end of the monitoring period.

A water temperature monitoring report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment. Based on the results of the monitoring and/or comments received during the review process, SCE and the agencies would discuss the results and develop, if required, environmental measures to address agency concerns.

Water Quality Monitoring Plan

A WQMP is proposed to periodically characterize physical, chemical, and bacterial water quality conditions in the bypass reaches and comparison reaches and compare to the current Basin Plan objectives and water quality standards and other applicable EPA national or CTR standards. This information would be compared to historical water quality data collected during the relicensing study.

A water quality monitoring report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment. Based on the results of the monitoring and/or comments received during the review process, SCE and the agencies may discuss the results and develop, if required, environmental measures to address agency concerns.

Sediment Management and Erosion Control Plan

A SMECP is proposed to establish methods for the removal and disposition of sediment that has accumulated in Proposed Project flowlines and forebays, and around intake structures; and establish inspection protocols at the Kaweah 1 and Kaweah 2 flowlines and measures to implement in the event of a flowline failure. Under the Proposed Project, sediment management activities would be conducted at the Kaweah 1 Intake, Kaweah 1 Forebay Tank, Kaweah 2 Intake, Kaweah 2 Forebay, and Kaweah 3 Forebay.

SCE would prepare a brief annual report to document sediment management and erosion control activities implemented during the previous calendar year. The annual report would be filed with the FERC within the first quarter of each year and distributed to the BLM, State Water Board, and CDFW.

Fish Population Monitoring Plan

The purpose of the Fish Population Monitoring Plan (FPMP) is to document fish species composition, distribution, and abundance in the bypass and comparison reaches, and characterize fish growth, condition factor, and population age structure in the bypass and comparison reaches.

A report would be prepared and distributed to the BLM, State Water Board, and CDFW for review and comment. The final report results, agency comments, and SCE's response to the comments would be filed BLM, State Water Board, and CDFW and filed with FERC.

Transmission, Power, and Communication Line Maintenance Measure

The purpose of the TPCLMM is to: (1) define measures to be implemented during pole replacement to reduce the potential for avian electrocution; and (2) specify vegetation clearance activities implemented around Project lines to maintain system reliability. The TPCLMMs include:

- Evaluation of any Project primary transmission line, transmission tap line, or power line involved in the electrocution of a protected raptor to determine the most feasible approach to eliminate the specified mortality risk through retrofitting the structure with raptor-safe equipment or replacing the structure with a raptor-safe pole configuration. The evaluation would be completed in consultation with the appropriate resource agencies (e.g., CDFW, USFWS, and BLM) and agreed upon measures would be implemented by SCE.
- Use of raptor-safe power line design configurations described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) when replacing existing towers, poles, phase conductors, and associated equipment of Project transmission lines.
- Conduct vegetation management consistent with the VIPMP (discussed below).

Vegetation and Integrated Pest Management Plan

- The VIPMP includes annual consultation and reporting with BLM and/or Tulare County regarding proposed vegetation management activities, including the method, location, and timing of activities to be implemented. As part of the coordination meeting, BLM and/or Tulare County and SCE will review proposed BMPs and measures and modify/update, as appropriate, for the protection of environmental resources.

Wildlife Mortality Monitoring Plan

The purpose of the Wildlife Mortality Monitoring Measure (WMMM) is to monitor wildlife mortality in the Kaweah 2 and Kaweah 3 flowlines, provide for regular maintenance of wildlife protection features, and define a reporting process. Specifically, monitoring would include:

- Recording wildlife mortality during regular inspections of the Kaweah 2 and 3 flowlines and their associated forebays; and

- Documenting the condition of wildlife bridges, escape ramps, and escape fencing, hazers/flashers during routine operation and maintenance activities and implementing required maintenance activities.

An annual report would document monitoring results and be distributed to the USFWS and CDFW for agency review and comment. The final report results, agency comments, and SCE's response to the comments would be filed with FERC.

Special-Status Plant Protection and Monitoring Plan

The purpose of the SPPMP is to obtain information on the location of special-status plants and mosses to allow protection during ongoing operation and maintenance of Proposed Project facilities.

Consultation with USFWS, BLM, and CDFW is proposed to identify reference populations and to verify the appropriate timing of special-status plant surveys. Within 2 weeks following completion of the reference population monitoring, the results would be provided to USFWS, BLM, and CDFW along with the proposed timing for completion of surveys. USFWS, BLM, and CDFW would have the opportunity to review the information and provide SCE with any comments within 2 weeks of receipt of the information.

Following completion of surveys, a report summarizing the methods, results, and proposed avoidance and protection measures would be prepared and submitted to USFWS, BLM, and CDFW. Comments would be addressed by SCE, and the final report would be distributed by SCE to USFWS, BLM, and CDFW and filed with FERC.

Special-Status Bat Protection Measure

The purpose of the Special-Status Bat Protection Measure is to protect day-roosting special-status bats²⁹ in the Kaweah 2 Powerhouse, Kaweah 3 Powerhouse, and the Kaweah 1 Campus maintenance building if painting or power washing of the interior walls at or near the day-roost occurs. During maintenance activities at the day-roost sites maintenance activities at the roost site would be conducted after dusk. Locations with night roosts, maintenance activities at the roost site would be conducted in the daylight hours.

If it is necessary to implement the maintenance during restricted time periods (identified above), SCE would inspect the site prior to conducting the work. If no bats are present and the roost areas are unoccupied, the maintenance activities would proceed as planned. If bats are present, a qualified biologist would temporarily exclude the bats (using passive exclusion methods) until the maintenance work has been

²⁹ During surveys conducted as part of relicensing, only special-status bat day roosts were observed in these facilities.

completed. SCE would consult with BLM and CDFW and obtain approval of the proposed exclusion method.

Documentation of the results of the exclusion (if required) would be prepared in a brief Special-Status Bat Protection Letter Report and would be distributed to the BLM and CDFW for review and comment. SCE would address comments and submit a final letter report that would be distributed BLM and CDFW and filed with FERC.

Road and Trail Management Plan

The Proposed Project includes implementation of a Project RTMP to maintain access to Project facilities, protect worker/public health and safety, and control erosion and sedimentation. The following measures would be implemented when conducting major road maintenance:

- Major road maintenance would be implemented in accordance with either Tulare County or BLM standards, as applicable, with consideration to the type and level of use that occurs along the road.
- Consult with the BLM or Tulare County, as appropriate, at least 60 days prior to implementation of any major road maintenance, to review/modify proposed BMPs and environmental measures, as appropriate, for protection of environmental and cultural resources.
- Obtain all necessary permits and approvals prior to implementation of major road maintenance (e.g., USACE 404 Permit, State or Regional Water Board 401 Water Quality Certification, and CDFW Streambed Alteration Agreement).
- All implemented major Proposed Project road maintenance activities, including consultation, would be summarized in an annual report that would be distributed to the BLM and/or Tulare County for review and comment. SCE would address comments and submit a final report that would be distributed BLM and/or Tulare County and filed with FERC.
- Environmental Training Program.

An Environmental Training Program is proposed to educate SCE personnel and contractors about special-status biological species, avian protection, and nesting birds in the vicinity of the Proposed Project. The Environmental Training Program is proposed to be reviewed and updated annually, prior to March 1st each year, to account for any changes in resources status.

3.2.4.2 Environmental Setting

The Proposed Project is located on the Kaweah River and East Fork Kaweah River near the community of Three Rivers in Tulare County on the western slope of the Sierra Nevada. The upper and lower watersheds of the Kaweah River are separated by the U.S. Army Corps of Engineers (USACE) Terminus Dam, which impounds the Kaweah River forming Lake Kaweah. Lake Kaweah is situated downstream of the Proposed Project, where mountainous terrain transitions into a gentle foothill and valley environment.

Aquatic and terrestrial resources in the Proposed Project area are summarized below with a focus on special-status species.

Aquatic Resources

Above Lake Kaweah in the Proposed Project area, the Kaweah River and East Fork Kaweah River are steep, coarse-bedded rivers (e.g., abundant large cobbles, boulders, and bedrock), with finer substrate (sand) in pools or in the velocity shadow of the larger substrate. Little gravel was found during the aquatic resources relicensing studies. The East Fork Kaweah River and the Kaweah River Reach from river mile (RM) 9 to RM 6 are defined by steep valley walls, confined canyons, and bedrock and/or coarse substrate.

Aquatic Habitats

The aquatic habitats associated with the Proposed Project include five river bypass reaches, two diversions, and three powerhouse inflows. Field studies to characterize aquatic resources were conducted in the five bypass reaches and in three nearby comparison reaches. The comparison reaches are located upstream or downstream of the bypass reaches. The reaches (bypass and comparison) are delineated by selecting sections of river that are homogeneous with respect to geomorphology and hydrology (i.e., reaches that have similar channel types and flow regimes). A brief description of the five bypass reaches and three comparison reaches is provided below (SCE 2019, Volume 3, Exhibit E, Supporting Documents A, Aquatic Technical Reports).

- Kaweah River Downstream of Kaweah 3 Powerhouse and Upstream of the East Fork River confluence (bypass reach) (RM 8.45 to 8.78). The bypass reach is relatively steep, approximately 0.33 mile in length, and located less than 0.10 mile upstream from the confluence with the East Fork Kaweah River. The reach is dominated by bedrock, step-pools, and boulder cascades. Riparian vegetation within the reach was patchy and discontinuous and dominated by dusky willow riparian scrub.
- Kaweah River Downstream of East Fork Kaweah Confluence and Upstream of Kaweah 1 Powerhouse (bypass reach) (RM 7.16 to 7.83). The bypass reach

exhibits moderate gradient, is approximately 0.67 mile in length, and is approximately 0.50 mile downstream from the confluence with the East Fork Kaweah River. The channel is primarily pool-riffle with interspersed short bedrock segments with boulder dominated, sparsely vegetated floodplains. Riparian vegetation within the reach was patchy and discontinuous and dominated by dusky willow riparian scrub.

- Kaweah River Downstream of Kaweah 1 Powerhouse and Upstream of Kaweah 2 Powerhouse (bypass reach) (RM 5.01 to 6.46). The bypass reach is approximately 1.45 miles in length and is located at an elevation of 1,075 feet. The right bank contains approximately 275 feet of riparian corridor while the left bank is intermittently vegetated. Dusky willow riparian scrub with patches of Fremont cottonwood forest dominate the riparian corridor.
- East Fork Kaweah River Downstream of the Kaweah 1 Diversion (bypass reach) (RM 0.10 to 0.25). The bypass reach flows through steep and narrow canyon and the channel contains cobble and gravel-sized substrate. The reach is approximately 0.24 mile long and is located less than 0.10 mile upstream from the confluence with the Kaweah River. There is limited riparian vegetation and it is primarily comprised of dusky willow riparian scrub.
- East Fork Kaweah River Upstream of Confluence with Kaweah River exhibits similar characteristics to the bypass reach defined above (East Fork Kaweah River Downstream of the Kaweah 1 Diversion). Similarities in channel, substrate and vegetation are due to the proximity of the two reaches (0.10 mile).
- Kaweah River Upstream of Kaweah 3 Powerhouse (comparison site) (RM 8.94 to 9.28). The comparison site is approximately 0.34 mile in length and flows through a steep and narrow canyon with bedrock sections and large boulders. Riparian vegetation is sparsely distributed and dominated by white alder, California sycamore, red willow, and dusky willow.
- Kaweah River Downstream of Kaweah 2 Powerhouse (comparison site) (RM 3.07 to 3.15). The comparison site meanders through a wider section of the Kaweah River, flowing through a river valley with sparsely vegetated bars and wider sections of riparian corridor lining the channel. The riparian vegetation is primarily arroyo willow riparian scrub.
- East Fork Kaweah River Upstream of the Kaweah 1 Diversion (comparison site) (RM 4.90 to 5.60). The comparison site is in a steep and narrow section of canyon that is lined with intermittent forest. The East Fork Kaweah contains series of large pools lined with bedrock topped over with sand, and more narrow sections of

bedrock riffles and runs. Where present, riparian vegetation is dominated by California sycamore woodland, white alder and dusky willow riparian forest.

Aquatic Species

This section provides information on existing aquatic species, such as benthic macroinvertebrates (BMI) and fish communities that are not special-status but provide information on existing conditions in the aquatic environment. Also discussed are the special-status aquatic wildlife known to occur in the Proposed Project area.

- *Benthic Macroinvertebrates.* As part of the relicensing studies, benthic macroinvertebrates were collected in the bypass and comparison reaches using the Surface Water Ambient Monitoring Program (SWAMP) RWB protocol.

The processed 600 organism count data was used to calculate the hydropower Index of Biotic Integrity (IBI) metrics as outlined in Rehn et al. (2007). Kaweah River comparison reaches had IBI scores of 35 and 37 and Kaweah River bypass reaches had similar scores that ranged from 31 to 40. The East Fork Kaweah River comparison reach had an IBI score of 36 and East Fork Kaweah River bypass reaches had similar IBI scores of 40 and 42 (SCE 2019).

- *Aquatic Mollusks.* During aquatic relicensing studies no aquatic mollusk species that are identified as candidate, sensitive, or special-status species in the Proposed Project area were documented.
- *Fish.* As part of the fish population relicensing study, a combination of backpack electrofishing and snorkel surveys was conducted in each of the five bypass reaches and three comparison reaches. The sampling occurred during late summer/early fall when flows were most accommodating.

Eight fish species were observed in the Project area. Hardhead (*Mylopharodon conocephalus*) and Sacramento pikeminnow (*Ptychocheilus grandis*) were captured at all sampling sites in the Kaweah River and only the lowest elevation site on the East Fork Kaweah River. Sacramento suckers (*Catostomus occidentalis*) were found throughout the Kaweah and East Fork Kaweah River sampling sites. Rainbow trout (*Oncorhynchus mykiss*) were found in the upper three sampling sites on the Kaweah River, but not the lower two sites and at all East Fork Kaweah River study sites. Smallmouth bass (*Micropterus dolomieu*) were found in the lower three Kaweah River sites and lower East Fork Kaweah River. California roach (*Hesperoleucus symmetricus*) were found at the two upper sites on the Kaweah River and the two lower sites on the East Fork Kaweah River. Brown trout (*Salmo trutta*) and sculpin (*Cottus spp.*) were also observed during sampling efforts.

Special-Status Species

Special-status aquatic species taken into consideration include those that are proposed, candidate, or listed as threatened or endangered under the California Endangered Species Act (CESA); wildlife considered species of special concern by the CDFW; and California fully protected species. Species that are proposed, candidate, or listed as threatened or endangered under the federal ESA are also considered, however, none were observed within the Project area. See Table 3–5 for a list of all special-status aquatic species.

Fish

Only one of the eight fish species observed, hardhead, is a special-status species (California species of special concern). Hardhead were present in all of the bypass and comparison reaches on the Kaweah River and in the lowest reach of the East Fork Kaweah River. Hardhead were not found in the upper reaches of the East Fork Kaweah River potentially due to the extensive number of natural upstream migration barriers in the narrow, steep, confined channel. During relicensing studies, a total of 36 hardhead were captured or observed. Of the 36 hardhead captured, approximately half were adults and half were juveniles. During the course of the study, unidentified minnows were observed, some of which could potentially have been hardhead.

According to Moyle (2002), hardhead are a large, native minnow generally found in undisturbed areas of larger low- to middle-elevation streams (elevation between 30 and 4,760 feet in the Sacramento and San Joaquin watersheds). Hardhead inhabit areas that have clear, deep pools with sandy, gravel/boulder substrates and slow water velocities (less than 0.05 foot per second). Hardhead co-occur with Sacramento pikeminnow and usually with Sacramento suckers, and tend to be absent from streams where introduced species, especially centrarchids, predominate.

Table 3–5. Special-Status Aquatic Species Known to or Potentially Occurring in the Study Area.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
Known to Occur in the Study Area				
Fish				
<i>Mylopharodon conocephalus</i> hardhead	Not Applicable	SSC	Undisturbed larger middle- and low-elevation streams with summer temperatures in excess of 20°C at elevations ranging from 30 to 4,750 feet. Most commonly found in clear, deep (>3 feet) pools with sand-gravel-boulder substrates and slow water velocities (<0.8 feet per second).	Known to occur in the study area. Observed in low to moderate abundance in the bypass and comparison reaches on the Kaweah River, and in the lowest reach of the East Fork Kaweah River.
May Potentially Occur in the Study Area				
Amphibians				
<i>Rana boylei</i> foothill yellow-legged frog	BLMS	SE	Perennial rocky (pebble or cobble) streams with cool, clear water in a variety of habitats from valley and foothill oak woodland, riparian forest, ponderosa pine, mixed conifer, coastal scrub, and mixed chaparral at elevations ranging from 0 to 6,370 feet.	This species has not been observed since 1970 and may potentially be extirpated from the Kaweah River Watershed. This species was not observed during extensive surveys conducted in support of relicensing. The most recent observations in the Kaweah River Watershed date to 1970.
Reptiles				
<i>Actinemys marmorata</i> western pond turtle	Not Applicable	SSC	Perennial wetlands and slow-moving creeks and ponds, from sea level to 6,000 ft in elevation, with overhanging vegetation and suitable basking sites such as logs and rocks above the waterline.	May potentially occur in appropriate habitat and is known to be present in the Kaweah watershed; however, this species was not observed during surveys conducted in support of relicensing.

Source: SCE 2019

Notes: Federal Status
BLMS = Bureau of Land Management Sensitive (Bakersfield Office)

State Status
SE = State Endangered
SSC = State Species of Special Concern

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Amphibians

- *Foothill Yellow-Legged Frog*. The foothill yellow-legged frog (*Rana boylei*) (FYLF) is CESA listed as threatened, and a California species of special concern. This frog inhabits small streams below 5,000 feet msl where breeding occurs in low- to moderate-gradient streams in shallow edge-water areas, often close to confluences with tributary streams. Surveys for FYLF were conducted in spring and/or late summer and early fall along the bypass and comparison reaches (and their tributaries) to document the distribution and abundance of FYLF. However, FYLF were not observed in any of the surveyed reaches. There have been no recent observations of FYLF in the Watershed and the most recent records of sightings date back to 1970, almost 50 years ago (Moyle 1973). Bullfrogs (*Lithobates catesbeianus*) were observed in much of the suitable FYLF habitat.

Reptiles

- *Western Pond Turtle*. The western pond turtle (*Actinemys marmorata*) (WPT) is a California species of special concern. This species inhabits ponds, lakes, rivers, marshes, streams, and irrigation ditches with rocky or muddy bottoms and herbaceous vegetation. The FYLF study sites were incidentally surveyed for WPT during the FYLF surveys. In particular, surveyors visually inspected pools and backwaters for WPT at each study site during the FYLF surveys. Additionally, potential sightings of WPT during implementation of other aquatic technical studies were recorded, if they occurred. In particular, these included the Instream Flow Study mesohabitat mapping and field data collection, the Fish Population study, and the Macroinvertebrate study (SCE 2019).
- No WPT were observed during the aquatic amphibian/reptile surveys. No incidental observations of WPT occurred during the other aquatic studies. There was one incidental observation of an unidentified turtle on July 25, 2018, in one of the bypass reaches (downstream of Kaweah 1 Powerhouse and Upstream of Kaweah 2 Powerhouse); the unidentified turtle was in the vicinity (200 m and 380 m east-southeast) of a pair of ponds where many bullfrogs, known predators of hatchling WPT, were observed (Jancowski and Orchard, 2013).
- Based on FYLF and WPT surveys, bullfrogs occupied the lower elevation habitats most suitable for WPT. Based on the available data, it is anticipated that the steep, narrow, cascading canyon characteristics of the East Fork Kaweah River do not provide much suitable habitat for WPT.

Terrestrial Resources

Terrestrial Habitats

Provided below is a summary of terrestrial habitats in the Proposed Project area.

- Vegetation Alliances. Vegetation alliances are classified based on the Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) mapping and vegetation alliance descriptions developed by the United States Department of Agriculture – Forest Service (USDA-FS) Region 5 (USDA-FS 2014). Twenty-five vegetation alliances were identified within the Project area. Elevation dictates the composition of alliances with the lower elevations associated with the Kaweah River primarily consisting of blue oak, annual grasses/forbs, and riparian mixed hardwood alliances, and the higher elevations along the East Fork Kaweah River consisting primarily of chamise, lower montane mixed chaparral and interior mixed hardwood alliances.
- Riparian Vegetation. Riparian and wetland habitats associated with the Project area were mapped from helicopter in 2015 and/or field surveys in 2018 (SCE 2019). As part of SCE's relicensing studies, representative study sites were selected within the bypass reaches for detailed assessment of existing riparian vegetation. Survey and mapping efforts were focused on recording and characterizing the distribution of dominant species, including woody riparian flow-dependent species that would be most sensitive to Proposed Project operations.

Within the Proposed Project area, the distribution and abundance of riparian vegetation is heavily influence by the geographic features surrounding the river channel. The East Fork Kaweah River is defined by steep and narrow canyon reaches that are lined with bedrock and boulders that provide little room for a riparian corridor. In reaches along the Kaweah River where the valley bottom broadens, riparian vegetation can be established on the floodplain and channel bars. Approximately 49 percent of the bypass reaches are sparsely vegetated. The other 51 percent is dominated by mostly native species including various willow species, white alder (*Alnus rhombifolia*), cottonwoods (*Populus* spp.), and California sycamores (*Platanus racemose*). Willows and alder are the dominant woody riparian species (SCE 2019).

Terrestrial Species

This section provides a summary of terrestrial special-status plants and wildlife known to occur in the Proposed Project area.

Special-Status Species

PLANTS

Refer to Table 3–6 for a list of special-status plants considered in this analysis including their status, habitat requirements, and blooming period information in the Project area.

Special-status plants are defined as the following:

- Federally listed plant species granted status by the United States Fish and Wildlife Service (USFWS) under the Federal ESA include threatened (FT), endangered (FE), proposed threatened or endangered (FPT, FPE), candidate (FC), or listed species proposed for delisting (FPD).
- State of California listed plant species granted status by the CDFW under the CESA include state threatened (ST), endangered (SE), rare (SR), and California Species of Special Concern (SSC).
- California Native Plant Society (CNPS) listed plant species, which uses the California Rare Plant Rank (CRPR) system for rare, threatened, or endangered plants in California. Under the CEQA, special-status plants include the following CRPR:
 - 1A (presumed extirpated in California and either rare or extinct elsewhere);
 - 1B (rare, threatened, or endangered in California and elsewhere);
 - 2A (presumed extirpated in California, but common elsewhere); and
 - 2B (rare, threatened, or endangered in California, but common elsewhere).
- Bureau of Land Management (BLM) list of sensitive plant species (BLMS), which are designated by the BLM State Director for special management consideration. In California, this includes all plants on BLM lands that are listed as FC, ST, SE, and SR; all plants that have a CRPR of 1B, and any other plants that the State Director has determined to warrant status.
- Twenty-eight upland special-status plant and moss species are identified as having the potential to occur within the Project area (Table BIO-2 in Section 3.2.4, Biological Resources). This determination is based on literature searches and database queries conducted for SCE's license application. During relicensing studies, only one special-status plant species, Munz's iris (*Iris munzii*) was observed. A total of 29 Munz's iris populations were identified in the vicinity

of the Kaweah 1 Flowline and associated access roads. During the botanical surveys no other special-status plants were observed. As part of other relicensing studies, primarily fish population and instream flow, portions of riparian habitats along the bypass reaches were surveyed. Based on literature searches and database queries, three special-status riparian plants and mosses, listed below, may have the potential to occur within the Project area.

- Watershield (*Brasenia schreberi* [CRPR 2B.3]).
- American manna grass (*Glyceria glandis* [CRPR 2B.3]).
- Holzinger's orthotrichum moss (*Orthotrichum holzingeri* [CRPR 1B.3]).

However, no special-status riparian plants were observed during any of the relicensing studies.

Terrestrial Wildlife

Refer to Table 3–7 for a list of special-status terrestrial wildlife species considered in this analysis, including their status, habitat requirements, and potential for occurrence in the Project area. Special-status terrestrial wildlife are defined as animals that are proposed, candidate, or listed as threatened or endangered under CESA; wildlife considered SSC by CDFW; and California fully protected species. In addition, this analysis includes wildlife species that are proposed, candidate, or listed as threatened or endangered under the federal ESA.

Table 3–6. Special-Status Plant Species Known to or Potentially Occurring in the Study Area.

Scientific/Common Name	Federal Status	State Status and CRPR Rank	Blooming Period/Fertile	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Known to Occur in the Study Area</i>					
<i>Iris munzii</i> Munz's iris	BLMS	CRPR 1B.3	April	Wet, grassy sites, open to part shade in foothill woodland habitat from 1,000 to 2,700 feet.	<ul style="list-style-type: none"> ● Observed in 2018 during special-status plant surveys conducted as part of relicensing. Twenty-nine populations were observed along the Kaweah 1 Flowline and associated access roads. ● SCE notes in their 1989 report that the population along the Kaweah 1 flowline responds favorably to SCE maintenance (periodically clearing away woody species near plants) (SCE 1989).
<i>May Potentially Occur in the Study Area</i>					
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	BLMS	CRPR 1B.1	May to Oct	Lake margins, with alkaline substrate including meadows and seeps, and playas. 196 to 2,888 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Atriplex cordulata</i> var. <i>cordulata</i> heart-leaved saltbush	BLMS	CRPR 1B.2	April to Oct	Chenopod scrub, meadows and seeps, and valley and foothill grassland with sandy, saline, or alkaline substrate. Up to 1,837 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Atriplex coronata</i> var. <i>vallicola</i> Lost Hills crownscale	BLMS	CRPR 1B.2	April to Aug	Chenopod scrub, valley and foothill grassland, and vernal pools with alkaline substrate. 164 to 2,083 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Brasenia schreberi</i> watershield	Not Applicable	CRPR 2B.3	June to Sept	Ponds and slow streams below 7,200 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Brodiaea insignis</i> Kaweah brodiaea	BLMS	SE, CRPR 1B.2	April to June	Known only from blue oak woodlands in the Kaweah and Tule River drainages in Tulare County (approximately 400 to 5,000 feet). Associated with reddish-brown clay loam soils underlain by granitic rock substrates.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.

Scientific/Common Name	Federal Status	State Status and CRPR Rank	Blooming Period/Fertile	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Calochortus striatus</i> alkali mariposa lily	BLMS	CRPR 1B.2	April to June	Chaparral, chenopod scrub, mojavean desert scrub, and meadows and seeps with alkaline and mesic substrate. 229 to 5,232 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Carex praticola</i> northern meadow sedge	Not Applicable	CRPR 2B.2	May to July	Perennial herb. Meadows and seeps. To 10,500 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>California macrophylla</i> round-leaved filaree	BLMS	CRPR 1B.1.2	Mach to May	Open sites, grassland, scrub, vertic clay, occasionally serpentine. 50 to 3,935 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Caulanthus californicus</i> California jewelflower	FE	SE, CRPR 1B.1	February to May	Grasslands in the southern San Joaquin valley. 250 to 3,300 feet. USFWS has not designated critical habitat for this species.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Clarkia springvillensis</i> Springville clarkia	FT, BLMS	SE, CRPR 1B.2	May to July	Chaparral, grasslands, and woodlands from 800 to 4,000 feet. USFWS has not designated critical habitat for this species. Known only from the Tulare River Drainage.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Deinandra mohavensis</i> Mojave tarplant	BLMS	SE, CRPR B.3	(May) June to October (January)	Chaparral, Coastal and Riparian scrub with mesic substrate. 2,100 to 5,250 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Delphinium purpusii</i> rose-flowered larkspur/Kern County larkspur	BLMS	CRPR 1B.3	March to May	Talus areas and cliffs among chaparral, foothill woodland, and pinyon-juniper woodland 900 to 4,400 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.

Scientific/Common Name	Federal Status	State Status and CRPR Rank	Blooming Period/Fertile	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Delphinium recurvatum</i> recurved larkspur	BLMS	CRPR 1B.2	March to June	Poorly drained, fine, alkaline soils in grassland scrub, and foothill woodland below 2,600 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Eremalche (=Malvastrum) kernensis</i> Kern mallow	FE, BLMS	CRPR 1B.1	March to May	Found on dry, open sandy to clay soils, often at the edge of balds. In valley and foothill grasslands. USFWS has not designated critical habitat for this species.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Eriogonum nudum</i> var. <i>murinum</i> mouse buckwheat	BLMS	CRPR 1B.2	June to Nov	Sandy soils in chaparral, grassland, or foothill woodland 1,100 to 3,800 feet. Known only from the Kaweah River drainage. Restricted to marble outcrops, although it may colonize disturbed sites.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Eryngium spinosepalum</i> spiny-sepaled button-celery	Not Applicable	CRPR 1B.2	April to June	Vernal pools, swales, and roadside ditches in lower foothills and grasslands of Fresno, Stanislaus, and Tulare counties from 200 to 2,100 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Mimulus norrisii/Erythranthe norrisii</i> Kaweah monkeyflower	BLMS	CRPR 1B.3	March to May	Marble crevices in chaparral and cismontane woodlands. Known only from the Kaweah and Kings River drainages. 1,100 to 4,300 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Fritillaria striata</i> striped adobe-lily	BLMS	ST, CRPR 1B.1	February to April	Clay soil in valley grassland and foothill woodland below 3,300 feet. Known to occur at one remaining site in Tulare County (Lewis Hill east of Porterville).	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Glyceria grandis</i> American manna grass	Not Applicable	CRPR 2B.3	June to Aug	Freshwater emergent wetlands, streambanks, and lake margins below 6,500 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.

Scientific/Common Name	Federal Status	State Status and CRPR Rank	Blooming Period/Fertile	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Helianthus winteri</i> Winter's sunflower	BLMS	CRPR 1B.2	January to December	Cismontane woodland and valley and foothill grassland. Grows in openings on relatively steep south-facing slopes, with granitic and often rocky substrate, often roadsides. 410 to 1,510 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Hesperocyparis nevadensis</i> Piute cypress	BLMS	CRPR 1B.2	Not Applicable	Closed-cone coniferous forest, chaparral, and cismontane, pinyon, and juniper woodland. 2,360 to 6,005 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Leptosiphon serrulatus</i> Madera leptosiphon	Not Applicable	CRPR 1B.2	April to May	Dry slopes in cismontane oak woodland and lower montane coniferous forest. Usually in decomposed granite, one instance on serpentine. 900 to 4,300 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Mimulus pictus/Diplacus pictus</i> calico monkeyflower	BLMS	CRPR 1B.2	March to May	Bare, sunny, shrubby areas, around granite outcrops. 443 to 4,101 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Monolopia congdonii</i> San Joaquin woollythreads	FE	CRPR 1B.2	February to May	Chenopod scrub and valley and foothill grassland. 190 to 2,625 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Navarretia setiloba</i> Piute Mountains navarretia	BLMS	CRPR 1B.1	April to July	Cismontane, pinyon, and juniper woodland and valley and foothill grassland with clay or gravelly loam substrate. 935 to 6,890 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Orthotrichum holzingeri</i> Holzinger's orthotrichum moss	Not Applicable	CRPR 1B.3	Not Applicable	Periodically inundated rock surfaces near streams in dry, montane forests from 2,300 to 5,900 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.

Scientific/Common Name	Federal Status	State Status and CRPR Rank	Blooming Period/Fertile	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Phacelia nashiana</i> Charlotte's phacelia	BLMS	CRPR 1B.2	March to June	Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland with usually granitic and sandy substrate. 1,960 to 7, 220 feet elevation.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Pseudobahia peirsonii</i> San Joaquin adobe sunburst/ Tulare Pseudobahia	FT	SE, CRPR 1B.1	February to April	Clay (Cibo, Porterville or Centerville) soils in grassland and foothill woodland from 200 to 2,700 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Ribes menziesii</i> var. <i>ixoderme</i> aromatic canyon gooseberry	–	CRPR 1B.2	April	Chaparral and montane woodlands to 3,900 feet.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.
<i>Sidalcea keckii</i> Keck's checker-mallow/ Keck's checkerbloom	FE	CRPR 1B.1	April to May	Cismontane woodland and valley and foothill grassland with serpentinite and clay substrates from 300 to 2,200 feet. USFWS has designated critical habitat for this species.	<ul style="list-style-type: none"> ● The study area is within the known geographic and elevation range of this species. ● This species was not observed during the TERR 1 special-status plant surveys.

Source: SCE 2019.

Notes: Federal Status
BLMS = BLM Sensitive
FE = Federal Endangered
FT = Federal Threatened

State Status
CRPR = California Native Plant Society Rare Plant Rank
CRPR 1B = rare, threatened or endangered in California and elsewhere
CRPR 2B = rare in California but more common elsewhere
SE = California Endangered
SR = California Rare
ST = California Threatened
3 = need more information
4 = plants of limited distribution; a watch list
_.1 = Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
_.2 = Moderately threatened in California (20–80 percent occurrences threatened)
_.3 = Not very threatened in California (<20 percent of occurrences threatened or no current threats known)

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Table 3–7. Special–Status Wildlife Species Known to or Potentially Occurring in the Study Area.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Known to Occur in the Study Area</i>				
<i>Birds</i>				
<i>Pandion haliaetus</i> osprey	Not Applicable	WL	Uncommon migratory raptor that builds large perennial nests in dead trees or other prominent supports near open water. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● An individual was observed April 2018 foraging in a pond adjacent to the Kaweah 2 Flowline Access Trail – Canal 5 during technical studies conducted in 2018. However, there is no appropriate breeding habitat within the FERC Project boundary.
<i>Aquila chrysaetos</i> golden eagle	Eagle Act, BLMS, BCC	CFP, WL (nesting and wintering)	Forages in grasslands and early successional stages of forest and shrub habitats at elevations up to 11,500 feet. Nests on secluded cliffs with overhanging ledges or large trees in open areas with unobstructed view.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● A mortality was recorded by SCE in the Kaweah 2 Forebay in 1994. ● An individual was observed flying over Kaweah 1 Flowline during reconnaissance surveys conducted in May 2018.
<i>Dendroica petechia</i> yellow warbler	BCC	SSC (nesting)	Breeds in riparian woodlands from coastal and desert lowlands at elevations up to 8,000 feet in the Sierra Nevada. Also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● One singing male was observed near the Kaweah 1 Flowline just downstream of the Kaweah 1 Diversion Dam during reconnaissance surveys conducted in May 2018.
<i>Mammals</i>				
<i>Antrozous pallidus</i> pallid bat	BLMS	SSC	Occurs in grasslands, shrublands, woodlands, and forests from sea level to 10,000 feet in elevation. Typically roosts in caves, crevices, or mines. Requires open habitat for foraging.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Corynorhinus townsendii</i> Townsend’s big-eared bat	BLMS	SSC	Found in all but alpine and subalpine habitats; most abundant in mesic habitats up to 6,000 feet in elevation. Requires caves, mines, tunnels, buildings, or other man-made structures for roosting. Extremely sensitive to disturbance and may abandon a roost if disturbed.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018. ● The CNDDDB query yielded one record for this species 2.5 miles northeast of Sycamore Drive at Generals Highway (HWY 198).

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Euderma maculatum</i> spotted bat	BLMS	SSC	Ranges from arid deserts and grasslands through mixed conifer forests up to elevations of 10,600 feet in southern California. Prefers sites with adequate roosting habitat, such as cliffs. Often limited by the availability of cliff habitat. Feeds over water and along marshes.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Lasiurus blossevillii</i> western red bat	Not Applicable	SSC	Roosts in forests and woodlands from sea level up through mixed mesic conifer forests in coastal ranges and the Sierra Nevada. Forages in a variety of habitats including croplands, grasslands, shrublands, and open woodlands and forests. Prefers solitary roosts in trees and occasionally shrubs.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Myotis ciliolabrum</i> western small-footed myotis	BLMS	Not Applicable	Found in a wide variety of habitats, primarily in relatively arid wooded and brushy uplands near water. Elevation range is from 0 to 8,900 feet.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Myotis evotis</i> long-eared myotis	BLMS	Not Applicable	Found predominantly in coniferous forests, typically only at higher elevations in southern areas (between 7,000 and 8,500 feet). They roost in tree cavities and beneath exfoliating bark in both living trees and dead snags.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Myotis thysanodes</i> fringed myotis	BLMS	Not Applicable	Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer, generally at 4,000 to 7,000 feet. Roosts in caves, mines, buildings, and crevices. Separate day and night roosts may be used. Uses open habitats, early successional stages, streams, lakes, and ponds as foraging areas. This species is migratory, making relatively short, local movements to suitable hibernacula.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.
<i>Myotis yumanensis</i> Yuma myotis	BLMS	Not Applicable	Occasionally roosting in mines or caves, these bats are most often found in buildings or bridges. Bachelors also sometimes roost in abandoned cliff swallow nests, but tree cavities are probably the original sites for most nursery roosts. These bats typically forage over water in forested areas.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Observed during bat surveys conducted for relicensing studies in 2018.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Eumops perotis californicus</i> western mastiff bat	BLMS	SSC	Found in variety of habitats including desert scrub, chaparral, oak woodland, ponderosa pine, meadows, and mixed conifer forests up to 4,600 feet in elevation. Distribution is likely limited by availability of significant rock features offering suitable roosting habitat.	Known to occur in the study area. <ul style="list-style-type: none"> ● Observed during bat surveys conducted for relicensing studies in 2018. ● The CNDDDB query yielded two records for this species adjacent to Project facilities: <ul style="list-style-type: none"> – A 1994 detection approximately 0.5 mile to the north of the Kaweah 3 Powerhouse and Switchyard. – A 1994 detection approximately 0.5 mile to the south of the Kaweah 3 Powerhouse and Switchyard.
<i>Bassariscus astutus</i> ringtail	Not Applicable	CFP	Found in most forest and shrub habitats in close association with rocky and/or riparian areas, usually not more than 0.6 mile from water. Dens in hollow trees, snags, or other cavities.	<ul style="list-style-type: none"> ● Known to occur in the study area. ● Sign was observed incidentally during surveys conducted for relicensing studies in October 2018: <ul style="list-style-type: none"> – Scat found at the Kaweah 1 Diversion Dam and Pool (East Fork Kaweah River). – Tracks found by the river behind the Kaweah 3 Powerhouse and Switchyard.
May Potentially Occur in the Study Area				
Reptiles				
<i>Phrynosoma blainvillii</i> coast horned lizard	BLMS	SSC	Occurs in valley foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper, and annual grassland habitats. The elevational range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of southern California.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Anniella pulchra</i> northern California legless lizard	Not Applicable	SSC	Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Often can be found under surface objects such as rocks, boards, driftwood, leaf litter, and logs. Elevation range is from sea level to 5,900 feet.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. ● The CNDDDB query yielded one record for this species from 1907 with the general location as Kaweah.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Lampropeltis zonata</i> California mountain kingsnake	BLMS	WL	A habitat generalist, found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus, or rotting logs that are exposed to the sun are good places to find this snake. Elevation range is from 1,500 to 8,000 feet.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
Birds				
<i>Gymnogyps californianus</i> California condor	FE	SE, CFP	Found mostly below 9,000 feet in open rangelands in the mountain ranges surrounding the southern San Joaquin Valley. Nests in caves, crevices, or sandstone ledges, typically at elevations below 6,500 feet. USFWS has designated critical habitat for this species.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. ● The CNDDDB query yielded one record outside the Study area, which documents a condor roosting area located at Blue Ridge, approximately 4.5 miles to the southwest of the Kaweah 2 Powerhouse. Condors typically roost here between April and September. ● The closest critical habitat is located along the Kaweah River downstream of the study area, including a portion of Kaweah Lake.
<i>Accipiter gentilis</i> northern goshawk	BLMS	SSC (nesting)	Forages and nests in middle to high elevation, mature, dense conifer forests. Wintering habitat includes foothills, northern deserts in pinyon-juniper woodland, and low elevation riparian habitats.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Buteo swainsoni</i> Swainson's hawk	BLMS, BCC	ST (nesting)	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Nests in riparian woodlands, juniper-sage flats, and oak woodlands. Forages in grasslands and agricultural areas.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Circus cyaneus</i> northern harrier	Not Applicable	SSC (nesting)	Occurs in a variety of habitats at elevations up to 10,000 feet. Forages in open areas such as meadows, wetlands, and grasslands. Breeding habitat is up to 5,700 feet in the Sierra Nevada, in areas with shrubby vegetation near foraging habitat.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Elanus leucurus</i> white-tailed kite	BLMS	CFP	Prefers coastal and lowland valleys; often associated with farmlands, meadows with emergent vegetation, and grasslands.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Haliaeetus leucocephalus</i> bald eagle	FD (Former FT, delisted on 7/09/07), Eagle Act, BCC, BLMS	SE, CFP	Year-round resident in ice-free regions of California. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. The majority of bald eagles in California breed near reservoirs and nests are usually located within 1 mile of foraging habitat.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. ● This species could potentially forage along the Kaweah River. There is no appropriate breeding habitat within the FERC Project boundary.
<i>Falco peregrinus anatum</i> American peregrine falcon	FD (Former FE, delisted on 8/25/99) (nesting), BCC	SD (Former SE, delisted on 8/6/09), CFP	Very uncommon breeding resident and uncommon as a migrant. Breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Active nesting sites are known along the coast, in the Sierra Nevada, and in the mountains of northern California. Migrants occur along the coast and the western Sierra Nevada in spring and fall.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Asio flammeus</i> short-eared owl	Not Applicable	SSC (nesting)	Open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Needs elevated sites for perching and dense vegetation for roosting.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Athene cunicularia</i> burrowing owl	BLMS, BCC	SSC	Suitable habitat throughout their breeding range typically includes open, treeless areas within grassland, steppe, and desert biomes. They generally inhabit gently-sloping areas, characterized by low, sparse vegetation.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Strix occidentalis</i> California spotted owl	BLMS, BCC	SSC	Nests and forages in dense, old growth, multi-layered mixed conifer, redwood, Douglas-fir, and oak woodland habitats, from sea level to elevations of approximately 7,600 feet.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.
<i>Cypseloides niger</i> black swift	BCC	SSC (nesting)	Nests in moist crevices or caves, or on cliffs near waterfalls in deep canyons at elevations ranging from 6,000 to 11,000 feet. Forages widely over many habitats; seems to avoid arid regions. Known from the high elevations of the Sierra National Forest.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. The CNDDDB query yielded one historic (1935) record for this species outside the Study area along the Marble Fork, approximately 3 miles upstream of the Kaweah 3 Powerhouse.
<i>Melanerpes lewis</i> Lewis' woodpecker	BCC	Not Applicable	Breeds east of the Sierra Nevada crest in cavities excavated in sycamore, cottonwood, oak, or conifer trees. Winter resident in open oak savannas, broken deciduous, and coniferous habitats with a sufficient supply of acorns and insects.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Empidonax traillii</i> willow flycatcher	BCC	SE	Summer resident in wet meadow and montane riparian habitats at 2,000 to 8,000 feet in the Sierra Nevada. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. ● The Kaweah Project is located outside the breeding range for this species. However, individuals may be present during the non-breeding season.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE	SE (nesting)	Wet meadow and montane riparian habitats at elevations ranging from 2,000 to 8,500 feet in elevation. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. USFWS has designated critical habitat for this species.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing. ● The Kaweah Project is located outside the breeding range for this species. However, individuals may be present during the non-breeding season. The closest designated critical habitat is in Kern County.
Mammals				
<i>Pekania pennanti</i> fisher – West Coast DPS	FPT, BLMS	ST, SSC	Found in large areas of mature, dense forest red fir, lodgepole pine, ponderosa pine, mixed conifer, and Jeffery pine forests with snags and greater than 50 percent canopy closure. Historically known from elevations of sea level to 8,000 feet.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing and suitable habitat is limited in the study area. ● The CNDDDB query yielded three historical records for this species in the study area: <ul style="list-style-type: none"> – A 1937 circular (non-specific) record in the mountains between the Kaweah River and East Fork Kaweah River, approximately 3.5 miles east of the Kaweah 3 Powerhouse. – A record from 1968 and is a circular (non-specific) record which covers the Kaweah 2 facilities including the powerhouse and the diversion. – A 2003 detection at a mesocarnivore photo station, 1 mile south of Oak Grove and the East Fork Kaweah River (approximately 1 mile south of the Kaweah 1 diversion). – There are seven other CNDDDB records within 5 miles of the study area.

Scientific/ Common Name	Federal Status	State Status	Habitat	Likelihood for Occurrence/Occurrence Notes
<i>Taxidea taxus</i> American badger	Not Applicable	SSC	Occurs throughout most of the state in areas with dry, friable soils. It is most abundant in drier open stages of most shrub, forest, and herbaceous habitats up to 12,000 feet in elevation.	<ul style="list-style-type: none"> ● May potentially occur in appropriate habitat; however, this species was not observed during surveys conducted in support of relicensing.

Source: SCE 2019.

Notes: Federal Status

BCC = Birds of Conservation Concern

BLMS = Bureau of Land Management Sensitive (Bakersfield Office)

FC = Federal Candidate

FD = Delisted Species

FE = Federal Endangered

FPD = Federal Proposed for Delisting

FT = Federal Threatened

State Status

CFP = State of California Fully Protected

SCT = State Candidate Threatened

SCE = State Candidate Endangered

SD = State Delisted

SE = State Endangered

SSC = State Species of Special Concern

ST = State Threatened

WL = Watch List

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SPECIAL-STATUS TERRESTRIAL INVERTEBRATES

There were no special-status terrestrial invertebrates documented during relicensing studies. There are two CNDDDB records of valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) within the Project area; although the Project area is outside the geographic range of this species according to USFWS. In 2014, the USFWS revised their description of the life history, population distribution, range, and occupancy. As part of the revised range, several counties were removed from the species' range. The Project area is located within Tulare County, which is no longer within the species' range.

SPECIAL-STATUS TERRESTRIAL AMPHIBIANS

According to literature searches and database queries conducted as part of SCE's relicensing studies, there are no documented occurrences of special-status terrestrial amphibians within the Proposed Project area and none were documented during relicensing studies.

The Proposed Project area is within FYLF historic range, and therefore, there is a potential for occurrence. However, there have been no recent observations of FYLF in the watershed and the most recent records of sightings date back to 1970, almost 50 years ago (Moyle 1973).

SPECIAL-STATUS TERRESTRIAL REPTILES

There was one potential observation of western pond turtle on July 25, 2018, in one of the bypass reaches (downstream of Kaweah 1 Powerhouse and Upstream of Kaweah 2 Powerhouse); the unidentified turtle was in the vicinity (200 m and 380 m east-southeast) of a pair of ponds where many bullfrogs, known predators of hatchling WPT, were observed (Jancowski and Orchard 2013).

According to literature searches and database queries conducted as part of SCE's relicensing studies, three other terrestrial reptiles have the potential to occur in the study area: coast horned lizard (*Phrynosoma blainvillii* [BLMS, SSC]), northern California legless lizard (*Anniella pulchra* [SSC]), and California mountain kingsnake (*Lampropeltis zonata* [BLMS, Watch List (WL)]). However, none were observed during relicensing studies.

SPECIAL-STATUS AVIAN SPECIES

- Golden Eagle. The golden eagle (*Aquila chrysaetos* [BLMS, Birds of Conservation Concern (BCC), California Fully Protected (CFP), WL]) is one of the largest birds in North American with long broad wings. Golden eagles favor partially or completely open grasslands, especially around mountains, hills, and cliffs. Golden eagles' nest on secluded cliffs with overhanging ledges or large

trees in open areas with unobstructed view. The golden eagle is known to occur in the Project area and an individual was observed flying over Kaweah 1 Flowline during reconnaissance surveys in May of 2018. While data suggests the Project area does not provide suitable nesting habitat for the golden eagle, they may forage in the grasslands of the Project area.

- Osprey. The osprey (*Pandion haliaetus* [WL]) is a migratory raptor that forages on fish in regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. The osprey builds large perennial nests in prominent supports, such as dead trees, near or over open water. Osprey are known to occur within the Project area and an individual was observed in 2018 while foraging in a pond adjacent to the Kaweah 2 Flowline Access Trail during one of the relicensing technical studies.
- Yellow Warbler. The yellow warbler (*Dendroica petechial* [BCC, SSC]) breeds in riparian woodlands from coastal and desert lowlands at elevations up to 8,000 feet in the Sierra Nevada mountain range. Yellow warbler are also known to breed in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush. The yellow warbler is known to occur in the Project area and a singing male was observed near the Kaweah 1 Flowline just downstream of the Kaweah 1 Diversion Dam during reconnaissance surveys conducted in 2018.

SPECIAL-STATUS BATS

Habitats such as Project river reaches, diversion pools, and forebays provide bat species with aquatic foraging habitat and drinking resources. Other habitats associated with the Project area (e.g., grasslands and oak woodland) provide additional open foraging habitat for special-status bats in the study area. Structures supporting hydroelectric operations, man-made structures, trees and rock features provide roosting habitat for multiple bat species. In 2018, roost, acoustic, and mist net sampling was conducted as part of the relicensing studies. The surveys resulted in the detection of nine special-status bat species in the Project area. The nine special-status bat species are listed below.

- Pallid bat (*Antrozous pallidus* [BLMS, SSC]);
- Townsend's big-eared bat (*Corynorhinus townsendii* [BLMS, SSC]);
- Spotted bat (*Euderma maculatum* [BLMS, SSC]);
- Western red bat (*Lasiurus blossevillii* [SSC]);
- Western small-footed myotis (*Myotis ciliolabrum* [BLMS]);

- Long-eared myotis (*Myotis evotis* [BLMS]);
- Fringed myotis (*Myotis thysanodes* [BLMS]);
- Yuma myotis (*Myotis yumanensis* [BLMS]); and
- Western mastiff bat (*Eumops perotis californicus* [BLMS, SSC]).

SPECIAL-STATUS MAMMALS

Based on database queries and literature searches, two special-status species, the fisher (*Pekania pennanti* [FPT, BLMS, ST, SSC]) and American badger (*Taxidea taxus* [SSC]), have the potential to occur in the Project area. Fisher may occur in montane hardwood or riparian habitats within the Project area. American badger may occur in open habitats within the study area where there are dry, friable soils for burrowing.

- Ringtail. The ringtail (*Bassariscus astutus* [CFP]) is found in forest and shrub habitats in close association with rocky and/or riparian areas, usually not more than 0.6 mile from water. Ringtail prefer to make their dens in hollow trees, snags, or other cavities (SCE 2019). Ringtail are known to occur in the Project area and even though an individual was never visually observed, ringtail sign (i.e., scat and pawprints) was observed near the Kaweah 1 Diversion Dam and Pool and near the Kaweah 3 Powerhouse and Switchyard during reconnaissance surveys. Based on habitat preferences, suitable habitat for ringtail occurs within the Project area along the riparian corridors of the Kaweah River and along the rocky outcrops associated with the Kaweah 1 Flowline.

No other special-status mammals were observed during the relicensing studies.

3.2.4.3 Discussion

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

Impact: Less Than Significant with Mitigation Incorporated

The Proposed Project includes new and modified resource protection measures, and environmental management and monitoring plans intended to protect biological resources.

As part of the Proposed Project, SCE would maintain a continuous flow up to a maximum of 1 cubic foot per second (cfs) from the Kaweah 1 Diversion and up to a maximum of 3 cfs from the Kaweah 2 Diversion to meet SCE's water delivery

obligations. During low-runoff periods, water is diverted and delivered to local water users, but no water is diverted for generation purposes. The effects of the prioritization of water deliveries on special-status species is described below.

Aquatic Species

Benthic Macroinvertebrates and Aquatic Mollusks

Relicensing studies found no BMI or aquatic mollusk species that are identified as candidate, sensitive, or special-status species in the Proposed Project area; therefore, the Proposed Project is not expected to have an impact on candidate, sensitive, or special-status BMI and aquatic mollusk species.

Fish

Only one of the eight species observed, hardhead, is a special-status species, and no other special-status fish species were identified or identified as having the potential to occur in the Proposed Project area. Hardhead were present in all of the bypass and comparison reaches on the Kaweah River and in the lowest reach of the East Fork Kaweah River. Hardhead were not found in the upper reaches of the East Fork Kaweah River potentially due to the extensive number of natural upstream migration barriers in the narrow, steep, confined channel.

To assess and reduce potential impacts associated with the Proposed Project, the Proposed Project includes WQMP, WTMP, SMECP, and VIPMP, and a FPMP. These plans would assess environmental conditions and include measures such as reducing herbicide runoff into water ways. Specifically, the FPMP would document fish species composition, distribution, and abundance in the bypass and comparison reaches, and characterize fish growth, condition factor, and population age structure in the bypass and comparison reaches. These plans require reports that would be prepared and distributed to the BLM, State Water Board, and CDFW for review and comment.

As discussed above in Section 3.2.3.4, the Proposed Project may potentially reduce MIFs in favor of water deliveries during periods where there is insufficient water available for both uses. Of the four instances when temporary flow modifications were implemented (2002, 2012, 2015, and 2016), the 2016 event resulted in the largest decreases below MIFs. During August of a Normal Water Year, MIF requirements are 20 cfs. In August 2016 the lowest recorded MIF was 13 cfs and the duration of the flow modification was 16 days (August 16 to 31, 2016). However, daily temperature data provided during the August 2016 flow modification shows a maximum daily temperature of 23.1°C during those 16 days. According to Thompson et al. (2012), both adult and juvenile hardhead acclimate well to 25°C water

temperatures. Additional data used during the relicensing process was provided by SCE (SCE 2021). Analysis of the modelling data shows that wetted perimeter decreased by approximately 9 percent and weighted usable area (WUA) for adult hardhead decreased by approximately 12 percent during that time period. Flow modifications in 2002, 2012, and 2015 resulted in small changes (less than 5 percent) in WUA and wetted perimeter (SCE 2021). No temperature data was provided for those flow modification events. Future water prioritizations may require additional water or prioritization duration than what occurred in 2016 or with past occurrences. As such, the Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to hardhead.

Though the Proposed Project includes measures and monitoring plans to reduce potential impacts to aquatic resources such as hardhead, Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to hardhead. Implementation of Mitigation Measure BIO-1 will require SCE to develop and implement a Water Prioritization Monitoring and Adaptive Management Plan with an objective to ensure protection of aquatic resources including hardhead and their associated habitat, which includes adherence to the Basin Plan water quality objectives.

Amphibians

FYLF are the only special-status amphibian species identified as potentially occurring in the Project area. FYLF were not observed during any of the relicensing field surveys. In the reaches where FYLF might be expected to be present based on physical habitat, bullfrogs were found (competitors/predators of FYLF). FYLF are not known to be extant in the Kaweah River Watershed and based on existing data and conditions, the potential that FYLF exist in the Project area is low. Factors including high numbers of bullfrogs in the lower elevation reaches and the absence of permanently flowing tributaries in the higher-elevation study reaches support this conclusion. The Proposed Project would benefit aquatic habitat conditions in the bypass reaches during periods of increased MIF.

To assess and reduce potential impacts associated with the Proposed Project, the Proposed Project includes WQMP, WTMP, SMECP, and VIPMP, and a FPMP. These plans would assess environmental conditions and include measures such as reducing herbicide runoff into water ways.

As discussed above in Section 3.2.3.4, the Proposed Project may potentially reduce MIFs in favor water deliveries during periods where there is insufficient water available for both uses. Data on historic prioritizations of water deliveries over MIFs is limited and no detailed aquatic resource assessment has been conducted with

past prioritization of water deliveries over MIFs. As such, the Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to FYLF.

Though the Proposed Project includes measures and monitoring plans to reduce potential impacts to aquatic resources, Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to aquatic resources. Implementation of Mitigation Measure BIO-1 will require SCE to develop and implement a Water Prioritization Monitoring and Adaptive Management Plan with an objective to ensure protection of aquatic resources, which includes adherence to the Basin Plan water quality objectives.

Reptiles

WPT are the only special-status reptile identified as potentially occurring in the Project area. However, there were no positive identifications of WPT in the water or on land during the three surveys conducted by the amphibian/reptile surveyors. As stated above, there was one account of an unidentified turtle observation. No incidental observations of WPT were documented during the other aquatic studies. However, GIS analysis indicates patches of potential WPT nesting habitat within the Project area. Changes in the Proposed Projects to increase MIFs are not likely to negatively affect the patches of potential WPT nesting habitat, as they would result in minor changes of wetted channel width. Additionally, changes to ramping rates would protect WPT hatchlings from desiccation.

To assess and reduce potential impacts associated with the Proposed Project, the Proposed Project includes WQMP, WTMP, SMECP, and VIPMP, and a FPMP. These plans would assess environmental conditions and include measures such as reducing herbicide runoff into water ways.

As discussed above in Section 3.2.3.4, the Proposed Project may potentially reduce MIFs in favor water deliveries during periods where there is insufficient water available for both uses. Data on historic prioritizations of water deliveries over MIFs is limited and no detailed aquatic resource assessment has been conducted with past prioritization of water deliveries over MIFs. As such, the Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to WPT.

Though the Proposed Project includes measures and monitoring plans to reduce potential impacts to aquatic resources, Proposed Project's prioritization of water deliveries over MIFs is a potentially significant impact to aquatic resources. Implementation of Mitigation Measure BIO-1 will require SCE to develop and implement a Water Prioritization Monitoring and Adaptive Management Plan with an objective to ensure protection of aquatic resources, which includes adherence to the Basin Plan water quality objectives.

Terrestrial Species

Special-Status Upland and Riparian Associated Plants

Database queries, literature searches, and field studies determined that 31 upland and riparian associated special-status plants had the potential to occur within the Project boundary. Out of the 31 special-status plant species with the potential to occur, only one species, the Munz's iris, is known to occur within the Project boundary. Potential effects to special-status plant species include the potential loss or degradation of habitat due to flowline maintenance, vegetation management, road and trail management, and vegetation clearance. Potential effects to riparian habitat include, changes in Project operations, vegetation management and vegetation clearing.

SCE will implement the SPPMP to minimize potential impacts on known populations of Munz's iris. The SPPMP requires periodic protocol-level botanical surveys with the results being provided to USFWS, BLM, and CDFW for review. In addition, the SPPMP states that SCE will observe a minimum 5-foot protective buffer around known populations of Munz's iris and/or other special-status plants documented during future periodic surveys. If activities necessary for public health and safety are required within 5 feet of known populations, the work will take place from June through February, outside of the species sensitive period.

Implementation of the VIPMP would further minimize any potential impacts to any special-status plants by requiring herbicides to be applied in accordance with a BLM (BLM lands) or Tulare County (SCE land) PUP. Finally, in order to combat introduction or spread of non-native invasive plants, SCE will implement the following measure from the VIPMP:

- Licensee will wash heavy equipment previously used on non-paved surfaces, outside of the watershed, with power or high-pressure washers to remove soil, seeds, vegetation, or other seed-bearing material before using on Project operation and maintenance activities.

With implementation of measures described in the VIPMP, SPPMP, and Environmental Training Program, effects to the Munz's iris, and other potentially occurring special-status upland and riparian associated plants would be less than significant (see Table 3-6).

Special-Status Birds

Osprey

Since the initiation of avian mortality monitoring in 1993, there have been no documented raptor mortalities on Project transmission and power lines (SCE 2019). However, the potential for the electrocution of raptors and other bird species on Project transmission and power lines and/or poles still exists. With the implementation of the Avian Mortality Monitoring Plan (AMMP), SCE would monitor Project transmission lines and power lines and report any avian mortality to the appropriate Agency staff (e.g., CDFW, USFWS, and BLM). The Proposed Project also includes implementation of the following measures from the TPCLMM regarding replacement of power poles and power lines.

- Evaluation of any transmission line, transmission tap line, or power line involved in the electrocution of a protected raptor to determine the most feasible approach to eliminate the specified mortality risk through retrofitting the structure with raptor-safe equipment or replacing the structure with a raptor-safe pole configuration. The evaluation will be completed in consultation with the appropriate resource agencies (e.g., CDFW, USFWS, and BLM) and agreed upon measures will be implemented by the Licensee.
- Use of raptor-safe powerline design configurations described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Powerline Interaction Committee [APLIC] 2006) when replacing existing towers, poles, phase conductors, and associated equipment.

Proposed Project operations related to modified MIF and ramping rates could potentially degrade aquatic-foraging habitats for osprey by affecting water quantity and quality. As described above, the Proposed Project would increase MIF releases to enhance aquatic habitat and mimic a more natural hydrograph. Modified ramping rates would generally decrease potential stranding and displacement of fish species, enhancing aquatic foraging habitat for osprey and other aquatic foraging birds. Therefore, the Proposed Project would have no significant adverse impact on osprey.

Golden Eagle

Under the Proposed Project, implementation of vegetation management would continue, including the removal of vegetation within a specified buffer immediately adjacent to developed Project facilities (refer to Table 2–15). Vegetation management would include trimming by hand and with equipment (trimming of grasses and forbs with a weed eater; and trimming of shrubs and trees with a chain

saw, other handheld saw, or pruners), application of herbicides to control vegetation, and removal of hazard trees with a chainsaw, handheld saw, or other equipment. Vegetation would be cleared within 15 feet on either side of transmission, power, and communication lines. These operations have the potential to affect golden eagle grassland foraging habitat. However, if it is determined that riparian vegetation must be removed, SCE would consult with resources agencies and obtain approvals prior to removal. Vegetation clearing and management is only being conducted in specifically defined small areas and would not result in significant degradation of grassland habitats (Table 2–15). In addition, the Proposed Project includes scheduling an annual consultation meeting with BLM and/or Tulare County. The focus of the meeting would be to inform BLM and/or Tulare County of proposed vegetation management activities, including the method, location, and timing of activities to be implemented. As part of the coordination meeting, BLM and/or Tulare County and SCE would review proposed BMPs and measures and modify/update, as appropriate.

Under the Proposed Project, application of rodenticides would be continued to control pests. Raptors could potentially be poisoned through consumption of rats or other prey contaminated by rodenticides. As provided in the VIPMP (Appendix 4–A, Section 4.5.2), use of rodenticides would be limited to the interior of or within the perimeter fencing of powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities. Interiors of facilities are inaccessible to raptors; and switchyards and areas within the perimeter fences around these facilities provide limited, if any, foraging habitat. The VIPMP also requires rodenticide applications to be implemented by a licensed PCA. This ensures proper placement and dosage of rodenticides to minimize the potential for secondary poisoning. With implementation of pesticides as described in the VIPMP and in compliance with preliminary BLM 4(e) conditions, regarding the use of pesticides to control vegetation, rodents, insects, etc., any potential for effects to special-status raptors from secondary poisoning would be negligible.

The Proposed Project would not result in significant adverse impacts to golden eagles.

Yellow Warblers

Yellow warblers are known to exist in the Project area and other riparian-nesting birds have the potential to occur in Project area riparian habitats. Proposed Project operations could potentially negatively impact riparian habitat for these species during periods when water deliveries are prioritized over MIFs. However, during regular operations, modified ramping rates and increased MIF may enhance riparian vegetation communities (see potential impact b. below for more information on riparian habitat) and would benefit riparian-nesting birds like the yellow warbler.

Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of riparian habitat during periods of water prioritization which will reduce any potentially significant impact to yellow warbler's and their associated habitat.

Vegetation management and clearing under the Proposed Project has the potential to result in the removal of riparian vegetation at specific locations where linear Project facilities intersect the Kaweah River and other drainages or ponds. However, measures specific to riparian vegetation are included in the VIPMP. The following measures protect riparian vegetation and riparian nesting habitat:

- Riparian vegetation will not be removed. If removal of riparian vegetation is required to protect worker/public safety and Project facilities, SCE will consult with appropriate resource agencies and obtain approvals prior to removal.
- To minimize the risk of herbicides inadvertently entering waters, no herbicides will be applied within 50 feet of streams or drainages.
- Herbicide applications shall not occur when weather parameters exceed label requirements, during precipitation, or when there is a forecast of greater than a 50 percent chance of precipitation in the next 48 hours.
- Herbicide use will be limited to days when measured wind conditions are less than 5 mph and shall be applied in a downwind direction from adjacent trees or shrubs.

Potentially Occurring Birds

Fourteen bird species were identified as having the potential to occur in the Proposed Project area. These species and their habitat requirements are briefly described in Table 3–7, Special-Status Wildlife Species Known to or Potentially Occurring in the Study Area.

Overall, the Proposed Project includes increased MIFs that would enhance riparian nesting habitat, but also includes periods where water deliveries would be prioritized over MIFs which could be a potentially significant impact. Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of riparian habitat during periods of water prioritization which will reduce any potentially significant impact to potentially occurring bird riparian habitat.

Mammals

Special-Status Bats

As discussed above, nine special-status bats were observed in the Project area. Proposed Project operations and maintenance have the potential to disturb special-status bats where roosts are present.

To minimize impacts and protect the roosts, the following practices defined in the Special-Status Bat Protection Measure would be implemented:

- In locations with day roosts, maintenance activities at the roost site will be conducted after dusk.
- In locations with night roosts, maintenance activities at the roost site will be conducted in the daylight hours.
- If it is necessary to implement the maintenance during restricted time periods (identified above), the Licensee will inspect the site prior to conducting the work. If no bats are present and the roost areas are unoccupied, the maintenance activities will proceed as planned. If bats are present, a qualified biologist will temporarily exclude the bats (using passive exclusion methods) until the maintenance work has been completed. The Licensee will consult with BLM and CDFW and obtain approval of the proposed exclusion method.

As described above, the Proposed Project would generally increase MIF releases to enhance aquatic habitat and mimic a more natural hydrograph. Modified ramping rates would decrease stranding and displacement of aquatic macroinvertebrates and fish species, enhancing aquatic foraging habitat. Special-status bats that utilize aquatic foraging habitat would therefore benefit from the Proposed Projects modification of MIF and ramping rates. Periods of contractual water deliveries have reduced flows below the required MIF in the past. Although there may be periods of reduced MIFs during times where water deliveries are prioritized over MIFs, these periods are likely to be limited and would not significantly impact bats. Additionally, implementation of Mitigation Measure BIO-1 would ensure protection of aquatic resources and water quality during periods of water prioritization which should further reduce any potential impact to special-status bat foraging habitat.

Overall, the Proposed Project would not have significant adverse impacts on special-status bats.

Ringtail, American Badger, and Fisher

Ringtail sign (i.e., scat and pawprints) was observed during reconnaissance surveys and suitable habitat exists within the Proposed Project area. American badger and fisher (West Coast Distinct Population Segment [DPS]) were additionally identified as potentially occurring (Table 3–7). Potential impacts to these species include secondary poisoning from rodenticide application and drowning in project flowlines.

As discussed above, the VIPMP would minimize any potential secondary poisoning through defining when and where rodenticide application is appropriate.

Implementation of the Wildlife Mortality Monitoring Plan (WMMP) would continue to facilitate the safe movement of wildlife across flowlines and forebays in order to minimize drownings. Since the beginning of monitoring wildlife bridges in 1993, there has been a significant decline in wildlife mortality due to drowning. During the spring and fall of 2018, eight species were recorded crossing wildlife bridges, no special-status species were observed during that time.

Overall, the Proposed Project would not have significant adverse impacts on special-status ringtail, American badger, or fisher.

Reptiles

The coast horned lizard, northern California legless lizard, and California mountain kingsnake were identified as potentially occurring within the Proposed Project area (Table 3–7). None of these species, however, were observed during relicensing studies. The Proposed Project includes continued operations with minor modifications such as increased MIFs, which are not anticipated to adversely affect reptiles with the potential to occur in the Proposed Project area.

Summary

As discussed above, the Proposed Project includes continued implementation of existing FERC required environmental measures, management and monitoring plans required to meet license articles, and associated orders that are ongoing and considered as routine operation and maintenance of the Project. In addition, several modifications are proposed to existing measures and plans, as well as new environmental measures and plans designed to protect, maintain, or enhance environmental and cultural resources over the term of the new license. Additionally, as part of the BLM Preliminary 4(e) conditions, any new Project constructions on BLM lands that were not addressed in FERC's NEPA process for relicensing that may affect BLM threatened and endangered species or BLM special-status species or their critical habitat, SCE must prepare and submit a biological evaluation for BLM approval (Department 2020). The Proposed Project would not have significant

impacts to species identified as a candidate, sensitive, or special-status species and their habitat with the implementation of Mitigation Measure BIO-1.

Implementation of the Proposed Project's changes to ramping rates and MIF releases (described in Chapter 2, Project Description) would be an overall benefit to special-status species in the Project bypass reaches. Prioritization of water delivery would result in reductions of MIFs. Despite years of low projected inflow, MIFs and contractual water deliveries have been maintained in the East Fork, and maintained over 99 percent of the time in the Kaweah. There were four instances over the 18-year flow record where contractually obligated water deliveries resulted in flows being reduced below MIFs by an average of 10 percent or less for an average duration of 11 days per occurrence. Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of aquatic resources and water quality during periods of water prioritization which will reduce any potential impact to special-status species and their associated habitat.

Overall, the Proposed Project would result in less-than-significant impact with mitigation to special-status species.

Mitigation Measures: BIO-1: Water Delivery Prioritization Adaptive Management Measure.

A. During low-flow conditions in the Kaweah River and East Fork Kaweah River, SCE shall not prioritize water deliveries over minimum instream flows (MIF) in the Kaweah River downstream of the Kaweah No. 2 Diversion, or in the East Fork Kaweah River downstream of the Kaweah No. 1 Diversion (Table 2–6 and Table 2–7) unless SCE implements the following measures:

- Not divert water for power generation at the associated powerhouse.
- Initiate prioritization at the Kaweah No. 1 Diversion, only after such time that available storage in the Mineral King Lakes has been released to meet water delivery and MIFs competing requirements.
- Operate flow-measurement devices to record the amount of flow in the associated flowline and in the river.
- Inspect the domestic water supply intakes and record deliveries to water user manifolds.
- Keep average daily stream flow in the Kaweah River downstream of the Kaweah No. 2 Diversion at or above 9.5 cubic feet per second (cfs) or the

minimum flow in Table 2–6, whichever is less, or in the East Fork Kaweah River downstream of the Kaweah No. 1 Diversion at or above 5.0 cfs.

B. Until the Adaptive Management Plan is approved (see below), SCE must request and receive approval from the Deputy Director prior to reducing flows below the levels authorized in Section A. During approved reduction periods, SCE will collect water quality and flow data. The data will be provided to the State Water Board weekly throughout the duration of the approved reduced flow period.

- Water quality and flow monitoring will occur a minimum of 24 hours prior to the flows dropping below 9.5 cfs or the minimum flow, whichever is less (Kaweah River), or 5.0 cfs (East Fork Kaweah River), to the extent possible based on forecasting, to establish baseline conditions. Monitoring shall continue for a minimum of 24 hours after flows meet or exceed the target flows identified above.
- Water quality parameters shall at a minimum include water temperature, turbidity, and dissolved oxygen.
- Locations shall include sites: 1) below Kaweah No. 1 Diversion Dam on the East Fork Kaweah River; 2) below Kaweah No. 2 Diversion Dam on the Kaweah River; 3) below Kaweah No. 1 Powerhouse; and 4) below Kaweah No. 2 Powerhouse. Exact monitoring locations shall be selected in consultation with the State Water Board.
- Monitoring shall occur at a maximum of 15-minute intervals.
- Reporting: Within 30 days of the instream flow in the Kaweah River downstream of the Kaweah No. 2 Diversion and in the East Fork Kaweah River downstream of the Kaweah No. 1 Diversion returning to 9.5 cfs or the minimum flow / 5.0 cfs, respectively, SCE shall submit a Water Diversion Report to the Deputy Director. The Water Diversion Report shall: 1) provide all water quality and flow data collected; 2) summarize the monitoring data; and 3) based on monitoring results, identify any impacts to aquatic resources, water quality, and riparian habitat due to reducing MIFs for water deliveries.

C. Within two years of license issuance, SCE will collaborate with State Water Board, California Department of Fish and Wildlife (CDFW), and representatives of the water users in the development of an Adaptive Management Plan (Plan). The Plan will inform decision making regarding further reductions in stream flows to levels below those authorized in Section A. The Plan also will identify any appropriate measures to protect aquatic resources (such as hardhead), riparian habitat, and water quality and ensure compliance with the Tulare Basin Plan's

water quality objectives. At a minimum, the Adaptive Management Plan shall include:

- Procedures for consulting with State Water Board, CDFW, and water users during low-flow conditions in the Kaweah River and East Fork Kaweah River;
- Notification of low-flow periods and voluntarily reductions of water deliveries by water users for a short duration;
- Adjustments to instream flows related to prioritization of water deliveries;
- Identify potential improvements to SCE's water delivery infrastructure that may reduce the amount of water needed for deliveries, including an assessment of the feasibility, utility, cost-benefit, and cost-effectiveness of any such potential improvements;
- Refinement/verification of the minimum amount of conveyance water necessary to make deliveries to the water users during low flow periods. Use this information to guide future water user deliveries; and
- Monitoring and reporting, including a report on adaptive management measures taken, to the Deputy Director within 30 days of the conclusion of the low-flow condition.

Until the Adaptive Management Plan is approved by the Deputy Director, SCE must request and receive approval from the Deputy Director prior to reducing instream flows below levels authorized in Section A.

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

Impact: Less Than Significant with Mitigation Incorporated

The Proposed Project's modified MIF and ramping rates would generally not change riparian recruitment because the same magnitude, frequency, timing, and recession rates of spring recruitment flows under the existing conditions would be maintained (SCE 2019). The Proposed Project would operate under conditions mimicking the natural hydrograph of springtime snowmelt causing high flows. Additionally, mimicking springtime flows would assist in maintaining channel conditions by scouring banks and maintaining channel complexity, while assisting established riparian communities along the channel and creating new areas for colonization. Increasing MIF during the driest periods of the year would benefit riparian communities by increasing the potential for water availability.

Proposed Project operations could potentially negatively impact riparian habitat periods when water deliveries are prioritized over MIFs. Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of riparian habitat during periods of water prioritization.

The potential for vegetation management and road and trail maintenance to result in riparian habitat loss, does exist. However, the implementation of VIPMP and TPCLMM protects riparian habitat by establishing practices to minimize potential contamination or degradation. Additionally, SCE will also implement the RTMP to provide additional protection to riparian habitat during road or trail maintenance activities. RTMP measures include:

All necessary permits and approvals will be obtained prior to implementation of major road maintenance (e.g., U.S. Army Corps of Engineers 404 Permit, State or Regional Water Board 401 Water Quality Certification, and California Department of Fish and Wildlife Streambed Alteration Agreement). If required, all measures and conditions established by resource agencies in these permits and agreements will be implemented as part of major road maintenance.

Overall, the Proposed Project would maintain riparian habitat along the Kaweah River and the East Fork Kaweah River. With implementation of the environmental measures and plans discussed above, and Mitigation Measure BIO-1 the impacts on any riparian habitat or other sensitive natural community as a result of Proposed Project activities would be less than significant with mitigation incorporated.

Mitigation Measures: Implement Mitigation Measure BIO-1.

- c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Impact: No Impact

Riparian and wetland habitats along the bypass reaches and around the diversion pools, forebays, and flowlines associated with the Project were mapped from helicopter (in 2015) and/or field surveys in 2018. Field surveys were conducted at selected representative riparian study sites within the bypass reaches to provide a more detailed assessment of the riparian communities in relation to flow and geomorphic conditions (SCE 2019). During these surveys, no wetlands or meadows were documented in areas that would be hydrologically supported by the Proposed

Project's bypass reaches, forebays, or flowlines. Therefore, the Proposed Project would have no impact on wetlands.

Mitigation Measures: None Required.

- d. **Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Impact: Less Than Significant

Resident Fish Passage

As part of the relicensing studies, SCE conducted a fish passage assessment of the Project bypass reaches and the Project diversion dams. The study identified two Project-related barriers on the Kaweah River. The Kaweah 2 Diversion Dam (RM 8.9) is an impassable fish barrier and Kaweah 2 Diversion Dam Gage Pool Weir (RM8.8) is a partial barrier to fish passage. A natural fish impassable fish barrier was identified approximately 0.6 mile upstream of the Kaweah 2 Diversion Dam. Therefore, the Kaweah 2 Diversion Dam precludes fish passage into the river reach from RM 8.9 to 9.5 (0.6 mile) (License Application, Volume 3, Supporting Document A, AQ-8).

On the East Fork Kaweah River, the Kaweah 1 Diversion Dam and the Kaweah 1 Diversion Dam Gaging Pool Weir are both impassable fish barriers located at approximately RM 4.7. An impassable natural barrier was surveyed at approximately RM 4.4 and aerial analysis of photographs suggests there are many similar impassable barriers in this section of river. Much of the East Fork Kaweah River is very narrow and steep which makes accessibility for groundtruthing and surveying dangerous and very difficult in many cases. Therefore, it is likely that the Project related barrier does not extensively preclude fish passage into the river reach above RM 4.7 and is consistent with existing conditions.

Additionally, the Proposed Project will result in a general increase in MIFs and controlled ramping rates which will benefit aquatic species and their potential migration. Although there may be periods of reduced MIFs during times where water deliveries are prioritized over MIFs, implementation of Mitigation Measure BIO-1 would ensure protection of aquatic resources.

Fish Entrainment

Kaweah 1 Flowline

Direct entrainment sampling occurred at the top of the Kaweah 1 Flowline for 1 day on May 14, 2019, however, due to conflicts with the landowner who has a home on the other side of the river near the sampling location, the sampling was canceled. The Kaweah 1 Flowline was sampled for adult and juvenile fish using a custom fyke trap (fit to the shape of the flowline) at the entrance of the Kaweah 1 Flowline just downstream of the sandbox. Drift net sampling with a 12-inch-by-17-inch rectangular opening occurred immediately downstream where the diverted water was released from the flume back to the East Fork Kaweah. The fyke net sampled 100 percent of the flume flow and the drift net was able to capture approximately 38 percent of the flow. The sampling for two 4-hour time windows during the day and a 0.8-hour time window at night before the sampling was discontinued, resulted in no fish (adult, juvenile, or fry) being captured. In addition, no fish were visually observed in the sandbox or flume. Additional sampling of the Kaweah 1 Flowline will occur within 18 months of issuance of the new license.

Kaweah 2 Flowline

Kaweah 2 Flowline was sampled for adult and juvenile fish using a modified fyke trap and three drift nets approximately 800 feet downstream of the Kaweah 2 Intake. The custom built fyke net sampled 100 percent of the flow. Three 6-inch diameter opening drift nets sampled 21 to 37 percent of the flow. Sampling occurred May 7 to 9, 2019 (late spring), July 9 to 11, 2019 (summer), January 21 to 23, 2020 (winter), and March 10 to 12, 2020 (early spring). The sampling for three days each sampling period (12 days total), including two 4-hour time windows each day and one 4-hour hour time window each night, resulted in the capture of one juvenile Sacramento pikeminnow (*Ptychocheilus grandis*; 35 mm total length [TL]) and one adult California roach (*Hesperoleucus symmetricus*; 63 mm TL). During each day of entrainment sampling (12 days total), staff walked the approximately 800-foot section of flowline upstream of the modified fyke trap location to visually observe if fish were present in the flowline. No fish were observed.

Kaweah 3 Flowline

Due to the risk associated with fyke netting the Kaweah 3 Flowline, only drift net samples were collected to sample for fry entrainment in the flowline the Revised AQ-9 Entrainment TSP. The flowline was sampled for fry on May 21 to 23, 2019 (late spring) and July 23 to 25, 2019 (summer) at 58 to 90 cfs using three drift nets with 6-inch diameter openings that sampled 8 to 12 percent of the flow. During the 6

days total of entrainment sampling, including two 4-hour time windows each day and one 4-hour hour time window each night, no fish were captured. During each day of the six days of entrainment sampling, SCE staff walked an approximate 1,000-foot section of flowline upstream of the Kaweah 3 Forebay location to observe if fish were present in the flowline. No fish were observed.

Based on consultation with resource agencies on December 3 and December 10, 2019, drift net sampling in the Kaweah 3 Flowline was deemed complete. In summary, during the entrainment study that was conducted, only two fish were captured. Based on the available data, it appears that entrainment potential at Kaweah 1, 2, and 3 flowlines is low, and additional entrainment assessments are planned for Kaweah 1 Flowline following FERC license issuance. In addition, with implementation of the proposed ESM, any potential impacts would be identified and reduced, if necessary, in consultation with the State Water Board and CDFW. Therefore, impacts related to fish entrainment would be less than significant.

Migratory Bird Movements

Fives species of migratory birds were documented in the Project area during reconnaissance surveys. The observed migratory birds include mallard (*Anas platyrhynchos*), common merganser (*Mergus merganser*), American coot (*Fulica americana*), mourning dove (*Zenaida macroura*), and Eurasian-collared dove (*Streptopelia decaocto*). With the implementation of the SMECP, VIPMP, TPCLMM, and AMMP (all discussed above in question a) the impacts on migratory birds would be less than significant.

Migratory Mammals

Mule deer are present within the Project area. Mule deer are a common wildlife species in California and carry no state or federal protection status. There is a known herd of migratory deer that spend the majority of the year in higher-elevation areas within the Sequoia National Park. Winter conditions drive the deer into lower elevation areas within the Project area. SCE may be required by FERC to comply with BLM's preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, the fencing would be built along the north side of the Kaweah 2 Flowline from the Kaweah 2 Forebay easterly to connect with the existing fencing that runs northerly from near Kaweah 2 Flume segment 6.5. Fencing would be built with a

buffer of at least 10 feet from the northern edges of the Kaweah 2 Flowline. This would allow adequate area between fencing and the flowline for wildlife ingress and egress along the flowline and at established flowline wildlife crossings. The Proposed Project would have a less-than-significant impact on the grassland habitat utilized by the migratory mule deer herd.

With implementation of the environmental measures and plans discussed above (including the TPCLMM and WMMM), impacts related to impeding the movement of fish or wildlife species, or the use of native wildlife nursery sites would be less than significant.

Mitigation Measures: None Required.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact: No Impact

The BLM's Approved RMP, Sequoia and Kings Canyon General Management Plan, Tulare County General Plan and ordinances, and Three Rivers Community Plan and draft Plan Update apply to the Proposed Project area for protection of biological resources.

The Proposed Project does not include any new land uses or activities that are not currently existing. The change in the FERC boundary would not result in an additional private property owner or land use authority or changes to land use and zoning designations. The Proposed Project would implement various measures and plans to protect fish, wildlife, and plants (as discussed above). The Proposed Project would have no impact related to local policies or ordinances protecting biological resources.

Mitigation Measures: None required.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact: No Impact

The Proposed Project is covered under the adopted SCE Cross Valley Loop Habitat Conservation Plan (HCP). The HCP is designed to protect the following federally listed species along 23 miles of transmission line in Tulare County: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp (*Branchinecta lynchi*), San Joaquin kit fox (*Vulpes macrotis mutica*), Orcutt grass (*Orcuttia inaequalis*), California tiger salamander (*Ambystoma californiense*),

Hoover's Spurge (*Chamaesyce hooveri*), and vernal pool tadpole shrimp (*Lepidurus packardi*). However, no known occurrences of these species has been documented in the Proposed Project area. Additionally, implementation of various measures and plans would further protect fish, wildlife, and plants (as discussed above) that occur within the Project area. Therefore, the Proposed Project would not conflict with the provisions of the adopted SCE Cross Valley Loop HCP.

Mitigation Measures: None Required.

3.2.5 Cultural Resources

Environmental Issues	Impact Determination
a. Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	Less than Significant Impact
b. Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Less than Significant Impact
c. Would the Proposed Project disturb any human remains, including those interred outside of dedicated cemeteries?	Less than Significant Impact

3.2.5.1 Applicant Proposed Measures

To address potential Proposed Project related impacts to cultural resources, the Applicant has proposed a HPMP, as discussed below.

3.2.5.2 Environmental Setting

This section provides an overview of the prehistoric and historic period setting related to cultural resources.

Prehistoric Setting

The Proposed Project occupies an area that lies within the westernmost traditional territory of Western Mono or Monache ethnolinguistic group, and near the traditional territory of the Foothill Yokuts ethnolinguistic group. Two separate Mono-speaking groups, the Patwisha (also Padwishe) on the Middle Fork of the Kaweah River and the Waksachi on the North Fork into Eshom Valley occupied the areas in the vicinity of the Proposed Project (Gayton 1948; Golla 2011:151).

Despite speaking languages from different families, the Monache and the Foothill Yokuts had a close, although not always friendly, relationship. Generally, the boundary between the two ethnolinguistic groups along the Kaweah River is placed around the confluence with the South Fork Kaweah River, where the mixed Wukchumni-Patwisha village of hotnu'nyu was located. However, boundaries such as this were not firm, and there was apparently freedom of movement both within and across customary tribal boundaries without it being a major offense, and hunting and seed gathering activities were conducted across them. The Wukchumni traveled into Patwisha territory to hunt

wild pigeons and sold the Patwisha the tule house mats that they brought with them (Gayton 1948:55-59, 74; Golla 2011:151).

Subsistence activities of both the Foothill Yokuts and Monache included hunting, fishing, and collection of plant resources, particularly acorns. A variety of flaked and ground stone tools (e.g., knives, arrow and spear points, and shaped pestles), the plain and sinew-backed bow, and baskets were commonly used. This area was an important link in a trade network that extended from the Pacific Ocean over the Sierra into the Great Basin. Within the Sierra Nevada, the Monache were important traders, acting as the intermediaries between the Yokuts and the Owens Valley Paiute (Eastern Mono). Obsidian, sinew-backed bows, moccasins, rock salt, pine nuts, and pinewood hot-rock lifters traveled west, while shell-bead money and finely made baskets traveled east (Gayton 1948:2.56).

Euro-American contact with Native American groups living in the California Central Valley began during the last half of the eighteenth century. At this time, the attention of Spanish missionaries shifted away from the coast, and its dwindling Native American population, to the missionization of interior populations, including the Yokuts. The efforts of the Spanish to missionize the Native American population began a history of destructive Euro-American interactions with Native Americans that eventually led to the loss of traditional Native American culture. Around 1830, American trappers from the north brought an epidemic, likely malaria, which killed over 75 percent of the natives of the San Joaquin Valley over a span of three years. One result was that Coastal and Central Valley populations fled into the foothills, only to be caught in a new Euro-American influx during the Gold Rush (Cook 1976).

Historic-Era Setting

Beginning in the late 1850s, logging, mineral exploration, farming, and ranching activities became increasingly widespread in the Kaweah River Watershed. Logging and ranching, especially the grazing of sheep, resulted in extensive environmental degradation. Between 1873 and 1882, galena and silver were mined in the Mineral King area, along the East Fork Kaweah River. These mining operations ceased when the silver ore was found to be difficult to smelt profitably. However, the residents soon focused their attention on the ideal agricultural lands of the lower Tulare County region in the San Joaquin Valley (Berryman and Elasser 1966).

The growth of the San Joaquin Valley agricultural sector was predicated on the development of an economical source of electricity to operate wells for irrigation purposes. To satisfy the burgeoning demand for power, the Kaweah Hydroelectric Project was constructed by the Mount Whitney Power Company, with construction beginning in 1898. The Kaweah 1 Development was completed in 1899, the Kaweah 2 Development was completed in 1905, and the Kaweah 3 Development was completed

in 1913. Additionally, Mount Whitney Power Company constructed small masonry dams on four high Sierra lakes in the Mineral King area between 1903 and 1905 to help regulate late-summer and early-fall flows on the East Fork Kaweah River, stabilizing flows for the Kaweah 1 Development. The Mount Whitney Power Company operated the Project until 1916, at which time it was purchased by Henry Huntington's Pacific Light and Power Company, which merged with SCE in 1917.

3.2.5.3 Regulatory Setting

All cultural resource identification was undertaken in accordance with the requirements of Section 106 of the NHPA, as codified in 36 Code of Federal Regulations (CFR) Part 800.

Additionally, the cultural resource identification complied with CEQA, which requires that projects financed by, or requiring the discretionary approval of public agencies in California, must consider the effects that a project has on historical and unique archaeological resources (Pub. Resources Code, § 21083.2). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance (Pub. Resources Code, § 50201).

When a project will affect state-owned historical resources, as described in PRC Section 5024, and the lead agency is a state agency, the lead agency will consult with the California State Historic Preservation Officer (SHPO) prior to approval of a proposed project (Cal. Code Regs., tit. 14, § 15064.5, subd. (b)).

Development of Area of Potential Effects

Section 106 of the NHPA requires that FERC develop an Area of Potential Effect (APE). Under 36 CFR Part 800, the APE is defined as “the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties” (36 CFR 800.16[d]).

In compliance with this requirement of Section 106 and as delegated by FERC, qualified personnel under the Secretary of the Interior’s Professional Qualification Standards (SOI PQS) established an APE for prehistoric and historic period archaeological resources and historic period built environment resources in consultation with the California SHPO and Project stakeholders. The APE for prehistoric and historic period archaeological resources and historic period built environment resources consists of the FERC boundary and any associated Proposed Project facilities outside the FERC boundary surrounded by a defined buffer area, depending upon facility type, as detailed in Table 3–8. SHPO approved the Study Area and proposed APE in a letter dated May 3, 2018 (FERC 2018). In addition, the proposed APE was presented to stakeholders for discussion and comment at a Kaweah Project Cultural Resources

Technical Working Group (TWG) Meeting on March 20, 2018. No comments were received on the APE from any member of the TWG. The CEQA APE is identical to the National Environmental Policy Act (NEPA) APE, no further distinction will be made.

Table 3–8. Cultural Resources Survey Area for Facilities that Lie Outside of the Existing FERC Project Boundary

Project Facility	Survey Area
Diversion Dams and Pools	15 feet around the perimeter
Flowlines ¹	20 feet on either side
Forebays/Forebay Tank	20 feet around the perimeter
Penstocks	15 feet on either side
Powerhouses and Switchyards	Within and up to 15 feet around the perimeter fence
Transmission, Power, and Communication Lines	25 feet on either side
Gages	10 feet around gages
Project Access Roads	20 feet on either side
Project Trails	15 feet on either side
<i>Ancillary and Support Facilities</i>	
Kaweah 1 Powerhouse Campus	Within the developed campus
Repeaters and Solar Panels	15 feet around the perimeter
River Access Parking	10 feet around parking area and beach

Notes:

1. Footbridges, wildlife bridges, and wildlife escape ramps are located on Project flowlines and will be surveyed concurrently with the flowlines.

While the APE for the Proposed Project is limited to the areas described above, cultural resources identification for historic period built environment resources also included documentation of SCE Kaweah hydroelectric facilities that are located outside of the FERC Project boundary on lands located within the SNP and operated under a SUP issued by the NPS. Although these historic period built environment facilities are not part of the Proposed Project and are instead managed under an NPS SUP, because the facilities are physically and contextually associated with hydroelectric facilities in the FERC Project boundary, built environment cultural resource identification included inventory and NRHP/CRHR evaluation of the built environment facilities to provide

contextual information for management of historic properties in the APE. This built environment study area is referred to as the SNP Study Area. This built environment documentation approach was developed in collaboration with SHPO and Project stakeholders.

Archaeological inventory conducted for relicensing did not include survey of lands in the SNP, as the lands are outside of FERC boundary, outside of the APE, and would not contribute to the historic built environment.

The APE for prehistoric and historic period archaeological resources is depicted in Figure 3–1 and the APE and SNP Study Area for historic period built environment resources is depicted in Figures 3–2 (a–c).

Identified Cultural Resources

The following describes the cultural resources that have been identified in the vicinity of the Proposed Project. The section is organized by cultural resource type, with discussion of prehistoric and historic period archaeological cultural resources followed by discussion of historic period built environment cultural resources.

Prehistoric and Historic Period Archaeological Resources

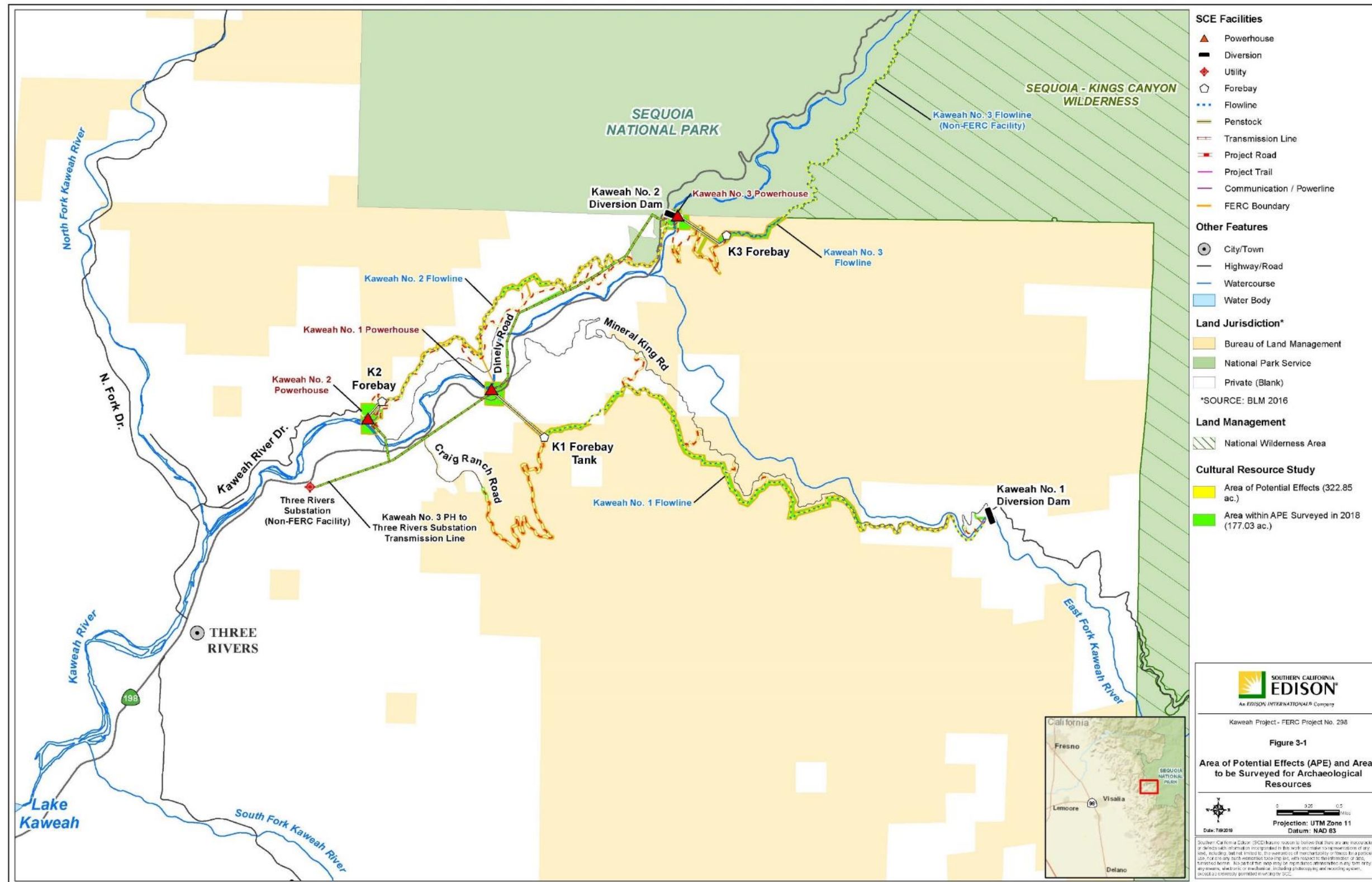
Formal record searches utilizing SCE’s Archaeology Geographic Information System Data Viewer (AGOL), California Office of Historic Preservation (OHP) Information Center record repositories, and Bureau of Land Management (BLM) records identified 42 previously documented prehistoric and historic period archaeological resources in or immediately adjacent to the APE prior to the current survey efforts. Of the 42 previously identified sites, 35 of these sites were re-verified and revisited as part of resource identification undertaken during the archaeological field survey. The remaining seven resources were not re-verified. Of these seven, four sites were recorded in 1961 and were mapped within the APE; however, upon further investigation were found to be located outside of the APE. Three isolates were not revisited because they are not classified as sites under the guidance of the NRHP and California OHP.

The 42 previously identified prehistoric and historic period archaeological resources in the APE are listed in Table 3–9 (License Application Volume 3, Exhibit E, Section 7.0) (SCE 2019), which includes overview characteristics of each site.

In addition to the 42 previously identified sites in the APE, eight new archaeological sites were identified during the archaeological field survey. Seven are historic-era age, with the majority associated with the construction and operation of the Project. One site is a bedrock milling station assumed to be used during the prehistoric or protohistoric period. The newly identified archaeological sites are listed in Table 3–10.

For additional detailed information and California Department of Parks and Recreation (DPR) 523 Site Records documenting the prehistoric and historic period archaeological resources identified in the APE (CUL 1 – Archaeology TSR). Please note, portions of this TSR are withheld from public disclosure in accordance with 36 CFR Section 800.11(c)(1) as the information contains details on the locations of sensitive cultural resources and disclosure of such information could be harmful to these resources.

While the CUL 1 – Archaeology TSR included identification of all prehistoric and historic-era archaeological resources in the APE, the documentation did not include new or updated NRHP/CRHR evaluation of archaeological resources. Such evaluation is being addressed in a Cultural Resources Evaluation Plan, which will guide cultural resource management of unevaluated cultural resources in the APE that may be affected by the Proposed Project and be implemented as part of the HPMP for the Proposed Project.



ct C:\GIS\Cardno\30735240_SCE_EasternHydro\map\Kaweah\Cultural\Map\Map\SCE_Eastern_KAWEAH_Cultural_APE_SurAreas_17111_01.mxd

Figure 3-1. Area of Potential Effects (APE) and Areas to be Surveyed for Archaeological Resources

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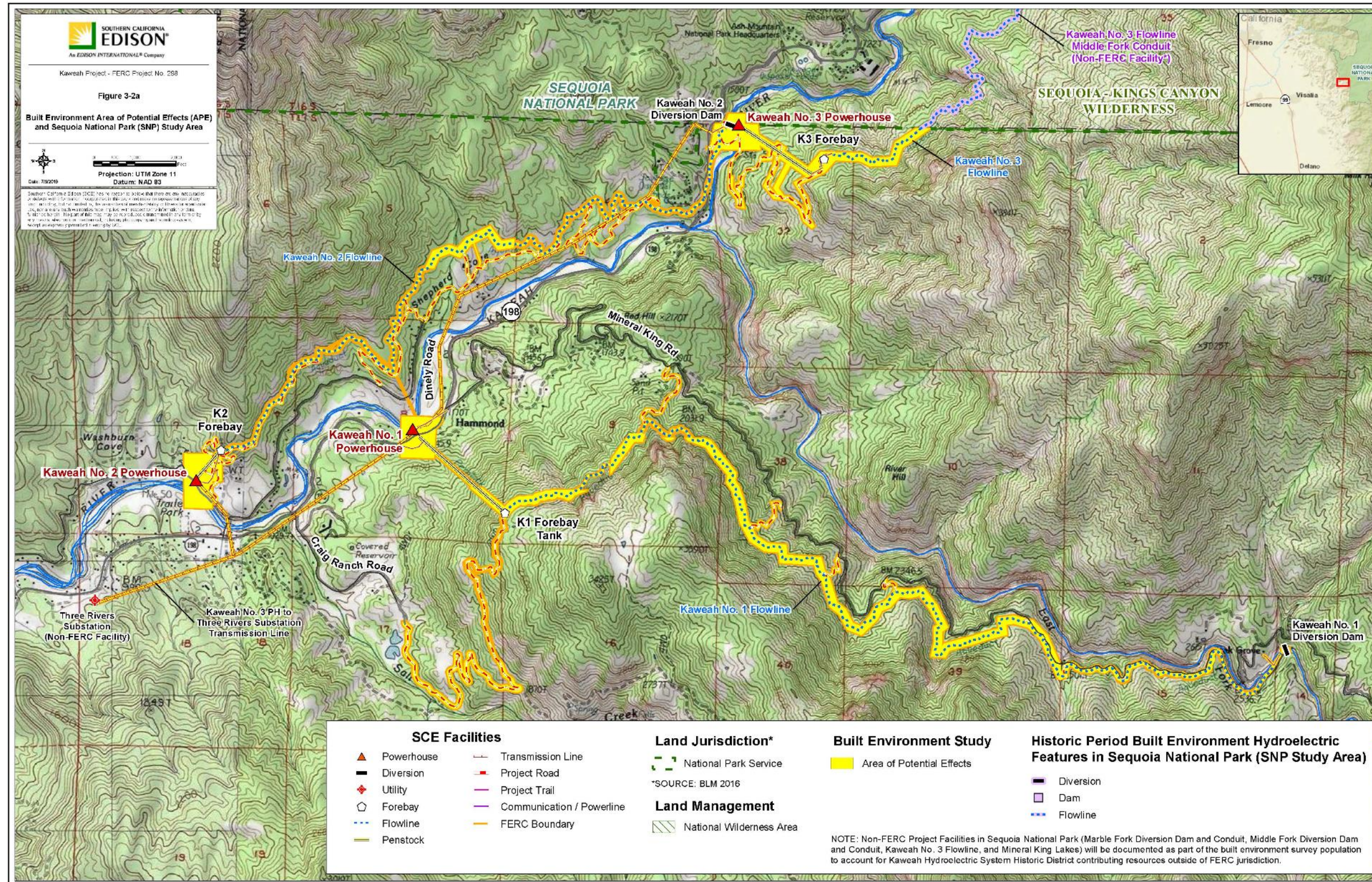


Figure 3–2a. Built Environmental Area of Potential Effects (APE) and Sequoia National Park (SNP) Study Area

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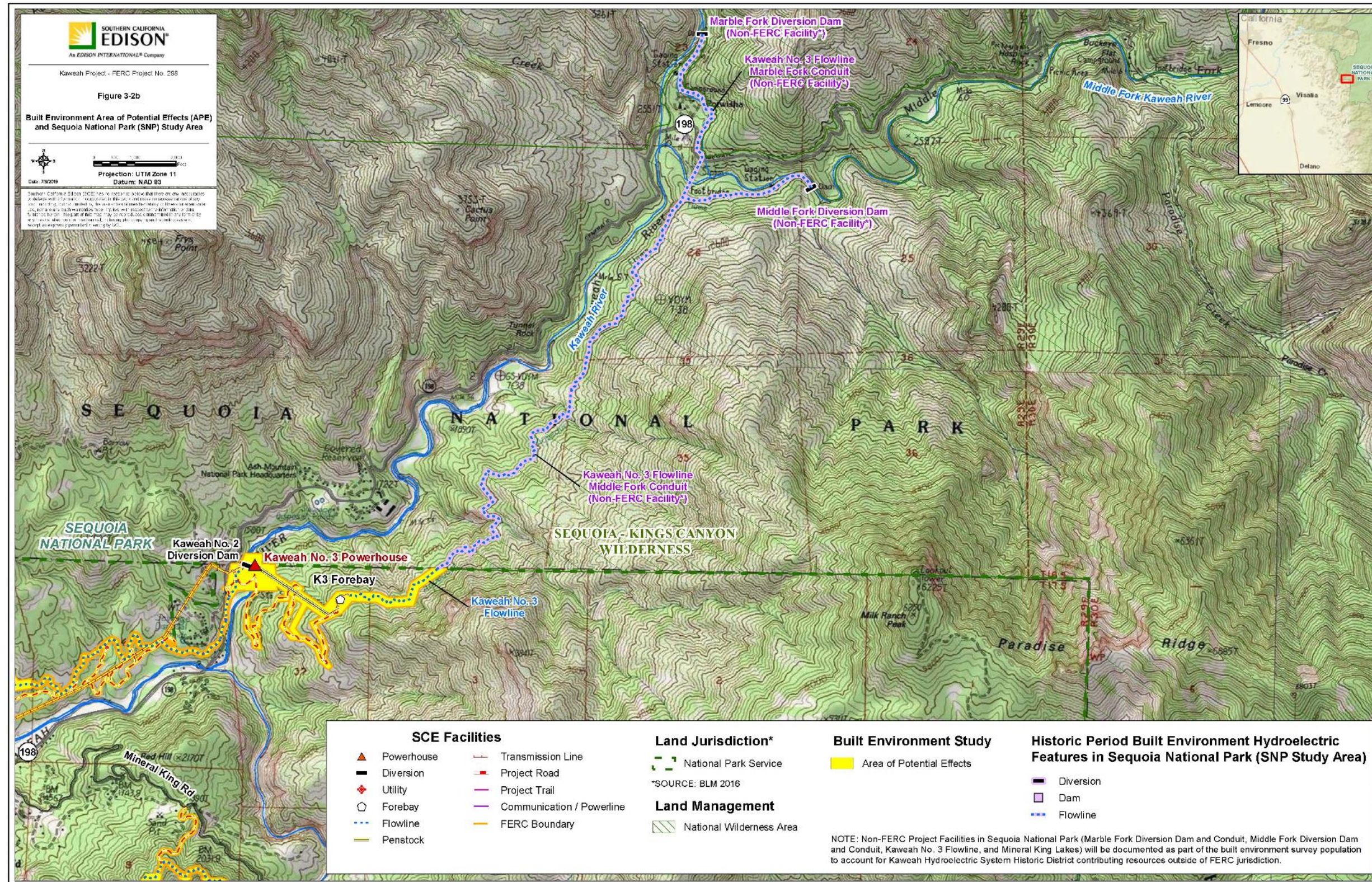


Figure 3–2b. Built Environment Area of Potential Effects

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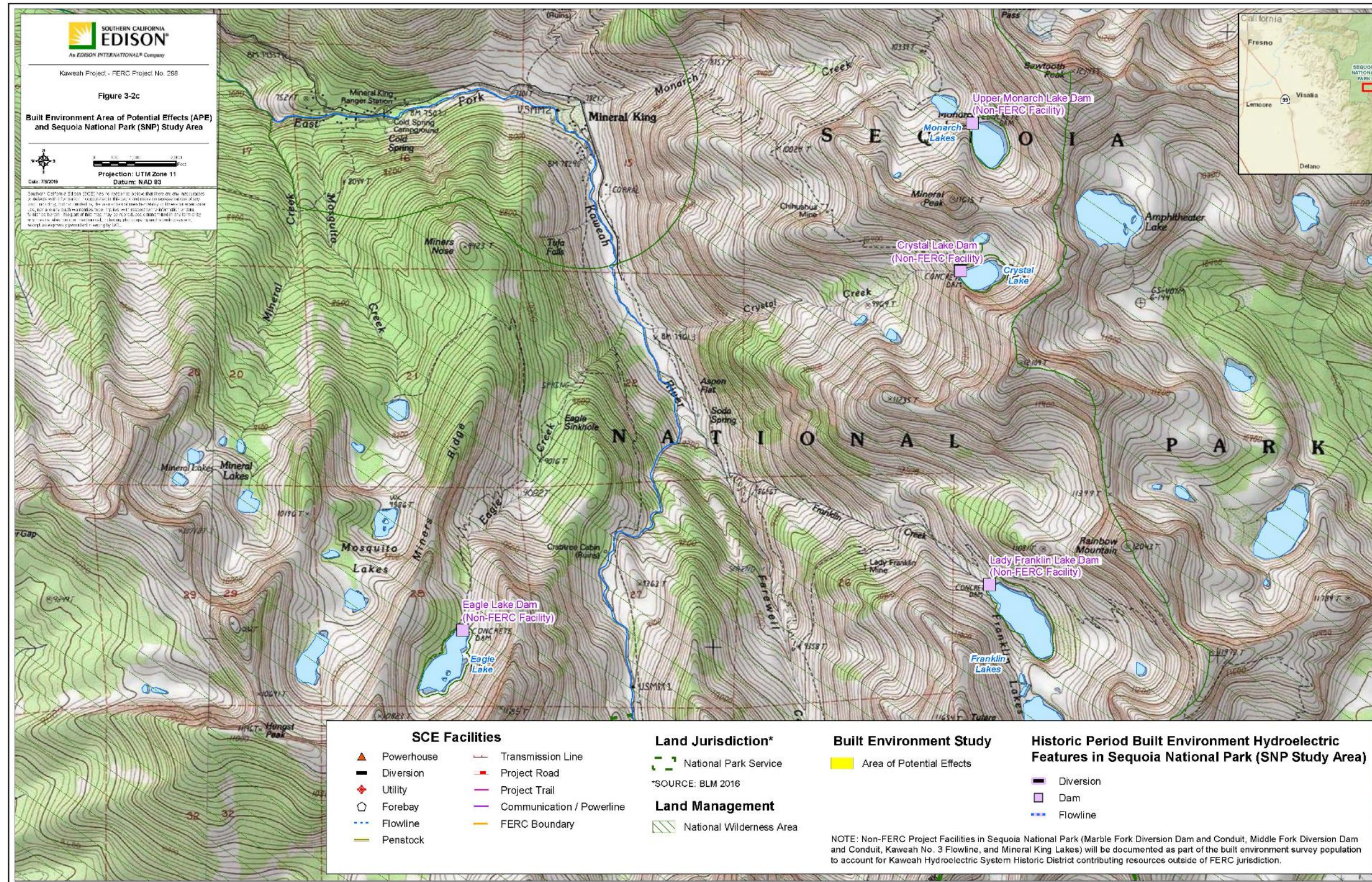


Figure 3-2c. Built Environment Area of Potential Effects (APE) and Sequoia National Park (SNP) Study Area

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Table 3–9. Previously Identified Archaeological Resources within the APE

P-Number/ Identifier	Site Type	Re-Verified	Site Record Update	Site Condition	FERC Facility	Land Owner	Previous Eligibility Status Prior to Study ¹
P-54-000232	Prehistoric: AP02 (Lithic scatter); AP03 (Ceramic scatter); AP04 (Bedrock milling feature); AP07 (Architectural feature)	Yes	Yes	Good	Transmission line	Private	Eligible for the NRHP/CRHR.
P-54-000258	Prehistoric AP02 (Lithic scatter); AP04 (Bedrock milling feature)	Yes	No	Good	Transmission line	Private	Unevaluated for the NRHP/CRHR.
P-54-000261	Prehistoric AP04 (Bedrock milling feature)	No	Yes	Not Applicable	Not Applicable	Not Applicable	Unevaluated for the NRHP/CRHR. Attempted to relocate, incorrect site location.
P-54-000266	Prehistoric AP04 (Bedrock milling feature)	No	Yes	Not Applicable	Not Applicable	Not Applicable	Unevaluated for the NRHP/CRHR. Attempted to relocate, incorrect site location.
P-54-000271	Prehistoric AP02 (Lithic scatter); AP14 (Rock shelter/cave)	No	Yes	Not Applicable	Not Applicable	Not Applicable	Unevaluated for the NRHP/CRHR. Attempted to relocate, incorrect site location.
P-54-000278	Prehistoric AP02 (Lithic scatter); AP03 (Ceramic scatter) — potsherds; AP04 (Bedrock milling feature); AP15 (Habitation debris) — midden	Yes	Yes	Fair	Kaweah 3 Powerhouse access road	SCE	Unevaluated for the NRHP/CRHR.
P-54-000290	Prehistoric AP04 (Bedrock milling feature)	No	Yes	Not Applicable	Not Applicable	Not Applicable	Unevaluated for the NRHP/CRHR. Attempted to relocate, incorrect site location. ²
P-54-001478	Prehistoric AP04 (Bedrock milling feature)	Yes	Yes	Good	Kaweah 2 Flowline access road	Private	Eligible for the NRHP/CRHR.
P-54-001479/H	Prehistoric, Historic-era AP04 (Bedrock milling feature); Historic-era HP29 (Landscape architecture); HP30(Trees); AH2 Foundations/structure pads; AH4 Trash scatters;	Yes	Yes	Poor	Kaweah 1	SCE	Unevaluated for the NRHP/CRHR.
P-54-001480/H	Prehistoric, Historic-era AH11 (Walls/fences); AH16 (Other) - Historic- era rock lined hearth; AP04 (Bedrock milling feature)	Yes	Yes	Good	Transmission line	Private	Eligible for the NRHP/CRHR.
P-54-003332	Historic General's Highway	Yes	No	Good	Kaweah 3 Powerhouse and access road	SCE and SNP	Eligible for the NRHP/CRHR.

P-Number/ Identifier	Site Type	Re-Verified	Site Record Update	Site Condition	FERC Facility	Land Owner	Previous Eligibility Status Prior to Study¹
P-54-004342	Prehistoric AP04 (Bedrock milling feature)	Yes	Yes	Good	Transmission line	Private	Unevaluated for the NRHP/CRHR. May connect or include site P- 54-000258.
P-54-004595	Historic-era AH02 (Foundations/structure pads); AH04 (Privies/dumps/trash scatters); AH06 (Water conveyance system); AH11 (Walls/fences)	Yes	No	Fair to good	Kaweah 1 Powerhouse	SCE	Unevaluated for the NRHP/CRHR.
P-54-004596	Prehistoric AP04 (Bedrock milling feature)	Yes	Yes	Fair to good	Kaweah 1 Powerhouse	SCE	Unevaluated for the NRHP/CRHR. Site is part of P-54-001479 (Feature A).
P-54-004616	Historic-era HP11 (Engineering structure)	Yes	No	Good	Kaweah 2 Flowline	SNP	Unevaluated for the NRHP/CRHR.
P-54-004693	Historic-era AH04 (Privies/dumps/trash scatters)	Yes	No	Good	Kaweah 2 Intake Road	SCE	Unevaluated for the NRHP/CRHR.
P-54-004694	Historic-era AH02 (Foundations/structure pads); AH11 (Walls/fences)	Yes	Yes	Good	Kaweah 2 Intake Road	SCE	Unevaluated for the NRHP/CRHR.
P-54-004695	Historic-era AH05 (Wells/cisterns); AH16 (Other)	Yes	Yes	Good	Kaweah 2 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004696	Historic-era AH04 (Privies/dumps/trash scatters)	Yes	No	Good	Kaweah 2 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004697	Historic-era AH02 (Foundations/structure pads)	Yes	Yes	Poor	Kaweah 2 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004698	Historic-era AH04 (Privies/dumps/trash scatters)	Yes	No	Good	Kaweah 2 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004739	Historic-era AH02 (Foundations/structure pads)	Yes	Yes	Good	Kaweah 2 Powerhouse	SCE	Unevaluated for the NRHP/CRHR. Site combined with P-54- 004756.
P-54-004749	Historic-era Isolate	Yes	No	Good	Kaweah 2 Flowline	SNP	Ineligible for the NRHP/CRHR.
P-54-004750	Historic-era Isolate	Yes	No	Good	Transmission line	Private	Ineligible for the NRHP/CRHR.
P-54-004751	Historic-era Isolate	Yes	No	Good	Kaweah 2 Flowline	Private	Ineligible for the NRHP/CRHR.
P-54-004752	Historic-era Isolate	No	No	Not Applicable	Kaweah 2 Flowline	Private	Ineligible for the NRHP/CRHR.
P-54-004754	Historic-era AH11 (Walls/fences); AH16 (Other)	Yes	Yes	Fair	Kaweah 2 Flowline access road	Private	Unevaluated for the NRHP/CRHR.
P-54-004755	Historic-era AH05 (Wells/cisterns)	Yes	No	Good	Kaweah 2 Flowline	Private	Unevaluated for the NRHP/CRHR.

P-Number/ Identifier	Site Type	Re-Verified	Site Record Update	Site Condition	FERC Facility	Land Owner	Previous Eligibility Status Prior to Study ¹
P-54-004756	Historic-era AH02 (Foundations/structure pads); AH04 (Privies/dumps/trash scatters); AH11 (Walls/fences)	Yes	Yes	Good	Kaweah 2 Powerhouse	SCE	Unevaluated for the NRHP/CRHR. Site P-54-004739 was combined in this site record as Feature A.
P-54-004757	Historic-era AH04 (Privies/dumps/trash scatters); AH11 (Walls/fences)	Yes	Yes	Fair	Kaweah 2 Powerhouse	SCE	Unevaluated for the NRHP/CRHR.
P-54-004758	Prehistoric AP04 (Bedrock milling feature)	Yes	No	Good	Kaweah 2 Powerhouse	SCE	Unevaluated for the NRHP/CRHR.
P-54-004759	Historic-era Isolate	No	No	Not Applicable	Kaweah 2 Flowline	Not Applicable	Ineligible for the NRHP/CRHR.
P-54-004761	Historic-era AH02 (Foundations/structure pads)	Yes	No	Good	Kaweah 1 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004762	Historic-era AH16 (Other)	Yes	No	Good	Kaweah 1 Flowline	BLM	Unevaluated for the NRHP/CRHR.
P-54-004763	Historic-era AH04 (Privies/dumps/trash scatters)	Yes	No	Good	Kaweah 1 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004764	Historic-era AH11 (Walls/fences)	Yes	No	Good	Mineral King Road	Private	Unevaluated for the NRHP/CRHR.
P-54-004765	Historic-era AH11 (Walls/fences)	Yes	No	Good	Kaweah 1 Flowline	Private	Unevaluated for the NRHP/CRHR.
P-54-004766	Historic-era Isolate	No	No	Not Applicable	Kaweah 1 Flowline	Private	Ineligible for the NRHP/CRHR.
P-54-004797	Historic-era Isolate	Yes	No	Good	Mineral King Road	BLM	Ineligible for the NRHP/CRHR.
P-54-005300	Historic-era HP39 (Other) - bridge abutment remains	Yes	No	Good	Mineral King Road	Private	Unevaluated for the NRHP/CRHR.
CM-SSDV-2016-01	Prehistoric AP04 (Bedrock milling feature)	Yes	Yes	Good	Kaweah 1 Forebay Road	BLM	Unevaluated for the NRHP/CRHR.
CM-SSDV-2016-02	Prehistoric AP04 (Bedrock milling feature)	Yes	Yes	Good	Kaweah 1 Forebay Road	BLM	Unevaluated for the NRHP/CRHR.

Note:

1. Information regarding existing NRHP/CRHR status of archaeological resources that were inventoried as part of the Archaeology TSR was obtained from review of SCE's AGOL and BLM cultural resource records. No NRHP/CRHR evaluation of archaeological resources has been conducted as part of the Archaeology TSR.

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Table 3-10. Newly Identified Archaeological Resources within the APE

Field Identifier	Site Type	Site Condition	Facility	Land Owner	Description
K-ALK-001	Historic-era: AH16. Other – telegraph/early telephone line remains	Good	Kaweah 1 Flowline/Forebay	BLM	A decomposing wood post and ceramic insulators with wiring on top of large granite boulders above forebay, likely associated with hydroelectric project.
K-ALK-002	Historic-era: AH4. Dumps/trash scatters; AH7. Roads; AH9. Quarries; AH11. Fences	Good	Kaweah 1 Forebay Road	BLM	Appears to be a historic-era road cut, pad, and refuse dump from a 1960s cabin or house. Not likely associated with hydroelectric project.
K-ALK-003	Historic-era: AH2. Foundations/structure pads	Good	Kaweah 1 Forebay Road	BLM	A large board-form concrete retaining wall likely associated with ranching or settlement.
K-ETE-002	Historic-era: AH4. Privies/dumps/trash scatters, AH6. Water conveyance system - unused penstock pipe	Good	Kaweah 3 Forebay	BLM	This site consists of discarded penstock sections that are likely associated with early construction of the forebay and horizontal penstock.
K-ETE-003	Historic-era: AH2. Foundations/structure pads; AH7. Roads/trails/railroad grades	Fair to Good	Kaweah 3 Penstock	BLM	Likely represents the remains of a Mount Whitney Power Co. construction camp or tramway system that was used for construction per SCE historic drawings.

Field Identifier	Site Type	Site Condition	Facility	Land Owner	Description
K-ETE-007	Historic-era: AH2. Foundations/structure pads, Historic-era: AH16 (Other) - Survey Marker	Good	Kaweah 3 Powerhouse	SCE	Likely represents remains of the Kaweah 3 Powerhouse cottages and associated buildings per historic photos.
K-ETE-011	Historic-era: AH16. (Other) – Rock Art and Modern Graffiti	Good	Kaweah 2 Diversion Dam	SCE	May be associated with worker housing and workers at Kaweah 2 Diversion and 3 Powerhouse.
K-MMR-006	Prehistoric: AP4: Bedrock Milling Feature	Good	Kaweah 2 Flowline Access Road	Private	Bedrock milling feature assumed to be used during the prehistoric or protohistoric period.

Historic Period Built Environment Cultural Resources

All built environment resources (buildings, structures, objects) that were determined to be over 45 years of age were subject to field inventory and NRHP/CRHR evaluation by SOI PQS Architectural Historians as part of the relicensing study. The inventory consisted of comprehensive written and photographic documentation of all historic period built environment resources located within the APE and SNP Study Area. For those properties that had been previously inventoried and evaluated and had formal NRHP/CRHR status, the survey effort focused on assessing each property relative to the previous documentation and recording any changes that may have occurred.

The APE and SNP Study Area includes 18 historic period built environment resources associated with hydroelectric development. Historic period built environment resources identified in the APE are listed in Table 3–11 and historic period built environment resources identified in the SNP Study Area are listed in Table 3–12. The tables include information regarding age of the resource, any previous NRHP/CRHR evaluation status prior to this current study, and an updated NRHP/CRHR status based on the results of the built environment study.

As detailed in Tables 3–11 and 3–12, the majority of historic period built environment resources identified in the APE and SNP Study Area were previously inventoried and evaluated for the NRHP. This previous inventory and evaluation was conducted in association with the previous Project relicensing effort (Lehman et al 1989). Because of the length of time that has passed since the previous recordation and the fact that the previous recordation did not formally inventory and evaluate some components of the Project because at the time the facilities were not yet 50 years of age, the current study provides an updated inventory and NRHP/CRHR evaluation to account for all historic period built environment resources.

As documented in Tables 3–11 and 3–12, the updated NRHP/CRHR evaluation generally concurs with the previous findings that the Kaweah 3 Project facilities comprise an NRHP/CRHR Historic District, the Kaweah 3 Hydroelectric System Historic District. The District is eligible under Criterion A of the NRHP and Criterion 1 of the CRHR for its association with the broad and significant pattern of agricultural expansion and development in Tulare County and the surrounding region. The District is also eligible under Criterion C of the NRHP and Criterion 3 of the CRHR, as the development of the Kaweah 3 facilities reflect a significant type, period, and method of construction as an early twentieth century hydroelectric system. The period of significance of the Kaweah 3 Hydroelectric System Historic District spans from construction in 1913 to sale of the company in 1916 to Pacific Light and Power Company. The District has a regional level of significance, reflecting its Tulare County and San Joaquin Valley development associations.

Table 3-11. Historic Period Built Environment Resources within the APE

Resource Name	Construction Date	Previous NRHP/CRHR Evaluation Status¹	Updated NRHP/CRHR Evaluation Status²
<i>Kaweah 1 Facilities</i>			
Kaweah 1 Powerhouse and Penstock	1898; 1928 to 1929	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 1 Diversion Dam	1898; 1940	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 1 Flowline	1947 (reconstruction from original 1899 flowline)	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 1 Forebay Tank	1947 (reconstruction from original 1899 forebay)	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 1 Powerhouse Campus	1927; circa 1950; 1990	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
<i>Kaweah 2 Facilities</i>			
Kaweah 2 Powerhouse and Penstock	1905	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 2 Diversion Dam	1905; 1938; 2012 to 2013	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 2 Flowline	1905; 1948; 1984	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
Kaweah 2 Forebay	1905; 1946	Ineligible for the NRHP	Ineligible for the NRHP/CRHR

Resource Name	Construction Date	Previous NRHP/CRHR Evaluation Status ¹	Updated NRHP/CRHR Evaluation Status ²
<i>Kaweah 3 Facilities</i>			
Kaweah 3 Powerhouse and Penstock	1913	Eligible for the NRHP/CRHR as a Contributor to a Historic District; Eligible for the NRHP/CRHR as an Individual property	Eligible for the NRHP/CRHR as a Contributor to a Historic District
Middle Fork / Kaweah 3 Flowline (partially in APE)	1913; 1946	Eligible for the NRHP/CRHR as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District
Kaweah 3 Forebay	1913; 2012	Eligible for the NRHP/CRHR as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District

Resource Name	Construction Date	Previous NRHP/CRHR Evaluation Status ¹	Updated NRHP/CRHR Evaluation Status ²
<i>Project Support Facilities</i>			
Kaweah Hydroelectric Project Stream Gages	1952 to 2005	Unevaluated	Ineligible for the NRHP/CRHR
Kaweah Transmission Lines: <ul style="list-style-type: none"> ● Kaweah 3 Powerhouse to Three Rivers Substation ● Kaweah 1 Tap Line ● Kaweah 2 Tap Line ● Kaweah Distribution and Fiber Lines 	1913; replacement ongoing with most recent transmission structures added circa 2012	Unevaluated	Ineligible for the NRHP/CRHR

Notes:

1. Previous NRHP evaluation of built environment resources in the APE was conducted on behalf of SCE in 1989 and documented in comprehensive single report: A History and Significance Evaluation of the Kaweah Hydroelectric System, Tulare County, California (Lehman et al 1989). SHPO concurred with the findings in a letter dated March 21, 1990 (Reference: FERC890210A).
2. SHPO concurred with all NRHP findings conducted as part of the current study in a letter dated November 5, 2019 (Reference: FERC_2018_0309_001).

Table 3-12. Historic Period Built Environment Resources within SNP Study Area

Resource Name	Construction Date	Previous NRHP/CRHR Evaluation Status ¹	Updated NRHP/CRHR Evaluation Status
<i>Kaweah 1 Facilities</i>			
Mineral King Dams	1903 to 1905	Ineligible for the NRHP	Ineligible for the NRHP/CRHR
<i>Kaweah Facilities</i>			
Marble Fork Diversion Dam	1913	Ineligible for the NRHP as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District
Marble Fork Flowline and Siphon	1913	Eligible for the NRHP/CRHR as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District
Middle Fork Diversion Dam	1913	Ineligible for the NRHP as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District
Middle Fork / Kaweah 3 Flowline (partially in SNP Study Area)	1913; 1946	Eligible for the NRHP/CRHR as a Contributor to a Historic District	Eligible for the NRHP/CRHR as a Contributor to a Historic District

Notes:

1. Previous NRHP evaluation of built environment resources in the APE was conducted on behalf of SCE in 1989 and documented in comprehensive single report: A History and Significance Evaluation of the Kaweah Hydroelectric System, Tulare County, California (Lehman et al 1989). SHPO concurred with the findings in a letter dated March 21, 1990 (Reference: FERC890210A).

While the updated study generally concurs with the previous evaluation efforts undertaken for Proposed Project facilities in the APE and SNP Study Area, the current analysis augments the earlier NRHP/CRHR findings in several key areas, as detailed below.

- While the previous evaluation found that the Marble and Middle Fork Diversion Dams did not contribute to the Kaweah 3 Hydroelectric System NRHP/CRHR Historic District and as such were ineligible for listing in the NRHP/CRHR, the current analysis finds that they do contribute to the established historic district because of their contextual, functional, and operational associations and as such recommends that the resources be included as contributors to the Kaweah 3 Hydroelectric System Historic District.
- While the previous evaluation found that the Kaweah 3 Powerhouse appeared individually eligible for the NRHP/CRHR as well as eligible as a contributor to the Kaweah Hydroelectric System NRHP/CRHR Historic District, the current evaluation finds that the powerhouse does not appear to be individually eligible for listing. Rather the NRHP/CRHR significance of the resource is embodied in its functional, operational, and contextual relationship to the Kaweah 3 Hydroelectric System as a whole, and as such appears eligible for the NRHP/CRHR as a contributor to the District under Criteria A/1 and C/3 and not additionally as an individual historic property.
- The current evaluation provides NRHP/CRHR analysis for Project facilities that were not formally addressed under the previous evaluation, finding that the Project's stream gages and transmission, distribution, and communication lines appear ineligible for listing in the NRHP/CRHR as either components of the Kaweah 3 Hydroelectric System Historic District or as individual properties.

The NRHP evaluation findings for all historic period built environment resources identified in the Proposed Project APE received SHPO concurrence in a letter dated November 5, 2019 (Reference Number FERC_2018_0309_001).

SCE Cultural Resource Management

SCE prepared a Cultural Resource Management Plan (CRMP) for the Project in 1992. The CRMP identifies specific measures that SCE undertakes to avoid adverse impacts to the NRHP-eligible properties located within the FERC Project boundary. The CRMP identifies various programmatic measures that SCE is required to implement, as well as resource monitoring and recordation, to ensure that any adverse impacts are accounted for and addressed in accordance with Section 106 of the NHPA as codified by 36 CFR Part 800. The CRMP states that if impacts to NRHP-eligible properties cannot be avoided with implementation of protective and avoidance measures, SCE, in

consultation with SHPO and FERC, shall develop a site-specific treatment plan in accordance with 36 CFR Part 800.4-800.6. Resource monitoring and recordation is required to occur in three-year increments to determine the success of current measures and to evaluate the need for additional treatment.

Historic Properties Management Plan

The HPMP, which was finalized in June 2020, serves as an update to the CRMP. Upon license issuance, the HPMP would supersede the existing CRMP and its requirements for the management of cultural resources and historic properties in the Project APE. The existing CRMP was drafted prior to the development of the FERC and Advisory Council on Historic Preservation (ACHP) *Guidelines for the Development of Historic Properties Management Plans*, issued May 20, 2002 (ACHP 2002). Because the HPMP has been developed in conformance with these guidelines, it provides a more comprehensive and robust management framework that better aligns with current management standards and documentation protocols.

Section 4 of the HPMP details how the HPMP would be implemented to avoid, minimize, and/or mitigate adverse effects to historic properties and unevaluated cultural resources in the APE, as well as those resources identified in Table 3-8. The section includes management responsibilities and implementation protocols that would govern the treatment and protection of historic properties in the APE; thereby, formalizing and standardizing management measures into the day-to-day operation and maintenance of the hydroelectric system. Implementation of the HPMP is intended to be guided by a living approach, with the document utilized and adapted over time to cultural resource requirements as they arise within the APE. In addition, the document is intended to be collaborative in nature, with ongoing TWG³⁰ consultation and reporting a core component of SCE's cultural resource management aims under the HPMP. Section 7 of the HPMP outlines the process for updating and amending the HPMP in consultation with the TWG and resolving any disputes that may arise under implementation of the document.

³⁰ The TWG includes: BLM Bakersfield Office, SHPO, Cold Springs Tribe, Dunlap Band of Mono Indians, FERC, Kern Valley Indian Community, North Fork Mono Tribe, Northern Band of Mono Yokuts, Picayune Rancheria of Chukchansi Indians, Santa Rosa Indian Community of the Santa Rosa Rancheria, Sequoia National Park, SCE, Tachi-Yokut Tribe, Three Rivers Historical Museum, Tübatulabal of Kern Valley Tulare County Historical Society, Tule River Indian Tribe, Wukchumni Tribe, and Wuksache Indian Tribe/Eshom Valley Band.

Monitoring Program

The monitoring program would occur at an interval of every 3 years, for sites that are either NRHP-eligible or are unevaluated and pending NRHP determinations. Monitoring would be conducted by an archaeologist qualified under the SOI PQS (36 CFR Part 61) in collaboration with the Applicant's Cultural Resource Specialist (CRS). SCE's CRS is the Applicant's technical expert and is responsible for reviewing and determining potential effects, identifying treatments and management measures, and initiating the appropriate level of consultation in implementing this HPMP.

Annual Reporting

The annual report would detail exempt and screened activities reviewed under the HPMP, avoidance and management measures implemented to avoid adverse effects, any inventory results and new resources identified, any evaluations and determinations of eligibility, written description of any monitoring undertaken, and any resolution of adverse effects that may have occurred under the provisions of the HPMP during the preceding year, as well as, any other reportable historic properties management activities. The report would include a summary of consultations that occurred with the TWG during the reporting period. The report would also include the conditions of sites and any disturbances that were observed at each site through monitoring using Site Condition Forms and any pertinent photographic documentation.

Resource Protection Measures

During the planning stage of any maintenance activity, work locations must be reviewed by the CRS so that historic properties or unevaluated cultural resources that may be affected can be identified for avoidance measures. The CRS would work with the team to adjust the design of maintenance activities where possible to avoid historic properties or unevaluated cultural resources. If avoidance is not possible other resource protection measures are proposed. Generally these include on-site monitor, restrict activities to existing transportation systems, use of protective barriers, and limiting crossings of linear features.

3.2.5.4 Discussion

Potential effects to cultural resources were identified based on continued operation and maintenance of facilities, including implementation of environmental resource protection plans and measures. A description of potential effects to tribal resources associated with operation and maintenance of the Proposed Project is presented in Section 3.2.18, Tribal Resources.

For the purposes of this section, "cultural resources" are identified as human-made objects, features, sites, buildings, structures, and/or districts in the APE. As defined

under CEQA (Pub. Resources Code, § 21084.1 and Cal Code Regs., tit. 14, § 15064.5, subd. (a)) “historical resources” include resources listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be “historical resources” for purposes of CEQA (Pub. Resources Code, § 5024.1; Cal. Code Regs., tit. 14, § 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or a preponderance of evidence indicates that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

Section 3.2.3.4, Regulatory Setting provides a listing of cultural resources and historic properties/historical resources in the Proposed Project APE. The following potential effects to cultural resources in the Proposed Project APE were evaluated:

- Potential effects from FERC Project boundary modifications.
- Potential inadvertent damage or destruction during Proposed Project maintenance activities, including:
 - Repair/maintenance activities at the Kaweah 3 Powerhouse (The Kaweah 3 Powerhouse is a component of the Kaweah 3 Hydroelectric System Historic District);
 - Repair/maintenance of flumes, canals, and support structures;
 - Vegetation management;
 - Road and trail maintenance; and
 - Transmission, power, and communication line maintenance.
- Potential damage or destruction from continued public use of the Kaweah 2 Powerhouse River Access Parking Area.

a. Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Impact: Less than Significant

Potential Effects from Proposed FERC Project Boundary Modifications

The FERC Project boundary would be modified under the Proposed Project to include all lands necessary for operation and maintenance of the Project, remove

lands no longer necessary for operation and maintenance of the Project (i.e., unused road and communication corridors), and correct known minor errors in the current Exhibit G of the License Application (see Figure 2–7, FERC Boundary Revisions). All facilities are included within the Proposed Project APE and were previously surveyed and inventoried as part of the CUL 1 – Archaeology TSR (SCE 2019b).

The FERC boundary would be decreased to remove communication line and road corridors that are remnants of the original Project which, have been physically removed and/or replaced by newer technology and are no longer in existence. Two known sites are adjacent to a road corridor that is being removed from management. No ground disturbance or actual road removal is proposed. One resource is a historic-era isolate, and the other resource was a historic-era resource that has been destroyed by the property owner and no longer constitutes a site.

To prevent significant impacts to historical resources, the Proposed Project includes implementation of an HPMP, which was finalized in June 2020 (SCE 2020). The HPMP guides the management, documentation, treatment and protection of unevaluated cultural resources and historic properties in the Proposed Project APE in accordance with Section 106 and CEQA. The HPMP stipulates avoidance and protection measures to implement prior to any operation and maintenance activities that could affect historic properties and unevaluated cultural resources in the APE.

The APE includes all FERC Project facilities where proposed operation and maintenance has the potential to cause direct or indirect adverse effects to historic properties. Specifically, the APE includes all existing Project facilities and operation and maintenance areas located within the FERC boundary, and any other facilities outside the FERC boundary where operation and maintenance activities would be conducted. Refer to Table 3–8.

The HPMP also requires that any unevaluated cultural resources that may be affected by operations be evaluated for the NRHP/CRHR to determine historic property status. Lastly, the HPMP stipulates consultation processes for the resolution of any adverse effects that are identified.

Cultural resources and historic properties within the Proposed Project APE would be managed by the HPMP in compliance with Section 106 and CEQA. Therefore, FERC boundary modifications would have no effect on cultural resources or historic properties.

Potential Inadvertent Damage or Destruction during Proposed Project Maintenance Activities

Under the Proposed Project, maintenance activities that have the potential to cause inadvertent damage or destruction of historic properties and/or unevaluated cultural resources include: (1) repair/maintenance activities at the Kaweah 3 Powerhouse (component of the Kaweah 3 Historic District); (2) repair of flumes, canals, and support structures (including components of the Kaweah 3 Historic District); (3) road and trail maintenance; and (4) transmission, power, and communication line maintenance. These activities could result in inadvertent damage or destruction of historic properties and/or unevaluated cultural resources, as described below.

Repair/Maintenance Activities at the Kaweah 3 Powerhouse

The NRHP/CRHR-eligible Kaweah 3 Hydroelectric System Historic District historic property includes Kaweah 3 Powerhouse 2, which could be affected by ongoing Project maintenance activities should such maintenance physically undermine any of the character defining features that convey the significance of the Powerhouse and the District, including the building's industrial Classical Revival mass, fenestration, ornamentation, and design (SCE 2019b). Such maintenance and repair could include replacement and/or reconfiguration of fenestration, resurfacing of exterior walls, or addition of interior or exterior utility features.

Repair of Flumes, Canals, and Support Structures

Under the Proposed Project, necessary repairs to Project flumes, canals, and support structures, including hand-patching of concrete, and repair of wood support structures, would continue to occur on an as-needed basis.

Cultural resources in the Proposed Project APE including archaeological sites P-54-004755, P-54-004616, P-54-004698, P-54-004696, P-54-004695, P-54-004693, P-54-4694, K-ALK-001, P-54-004762, P-54-004763, P-54-004764, and P-54-004765, P-54-004761 are located adjacent to or in close proximity to flowlines, canals, or support structures, and as such ongoing maintenance and repair of these flowlines has the potential to affect cultural resources through inadvertent damage or destruction to the sites.

Additionally, the NRHP/CRHR-eligible Kaweah 3 Hydroelectric System Historic District historic property includes Kaweah 3 Flowline and Kaweah 3 Forebay, which could be affected by Project maintenance should such maintenance undermine any of the character defining features that convey the significance of the facilities or of the district. Character defining features of the Kaweah 3 Flowline include its winding concrete ditch and flume infrastructure, stone wall foundational structure

undergirding select portions, and board formed concrete slabs. Character defining features of the Kaweah 3 Forebay include its concrete-lined forebay pool and its utilitarian control gates and spillway (SCE 2019b).

Vegetation Management

Under the Proposed Project, the VIPMP would include ongoing vegetation trimming by hand, herbicide use, and hazard tree removal, and implementation of new measures to reduce the spread or introduction of noxious weeds (refer to Section 2.3).

These vegetation management activities have the potential to affect cultural resources through inadvertent damage or destruction to archaeological cultural resources that may be adjacent to clearance or management areas. Such affects could stem from site encroachment by management crews, damage from hazard tree felling, or ground disturbance associated with vegetation removal.

Road and Trail Maintenance

Under the Proposed Project, Project access roads and trails would continue to be regularly inspected and repaired on an as-needed basis. Minor road maintenance generally includes the following types of activities: debris removal; basic repairs, including filing of potholes; maintenance of erosion control features such as culverts, drains, ditches, and water bars; repair, replacement, or installation of access control structures such as posts, cables, rails, gates, and barrier rock; and repair and replacement of signage. Major road maintenance generally includes the following types of activities: placement or replacement of culverts and other drainage features; bridge deck replacement; grading; sealing; resurfacing; and road replacement.

Cultural resources in the Proposed Project APE including archaeological sites P-54-000278, P-54-004693, P-54-004694, P-54-004754, CM-SSDV-2016-01, CM-SSDV-2016-02, and K-MMR-006 are located adjacent or in close proximity to Project roads, and as such ongoing maintenance and repair of these access facilities has the potential to affect cultural resources through inadvertent damage or destruction to archaeological sites. Such efforts could stem from site encroachment by management crews or ground disturbance associated with necessary repairs.

Transmission, Power, and Communication Line Maintenance

The Proposed Project includes ongoing transmission, power, and communication line maintenance activities, including pole maintenance and replacement of damaged poles on an as-needed basis. New poles are placed in, or immediately adjacent to previously existing holes, using line trucks.

Cultural resources in the Proposed Project APE including NRHP/CRHR-eligible archaeological historical resource P-54-000232, NRHP/CRHR-eligible archaeological historic property P-54-001480/H, and unevaluated archaeological site P-54-004342 are located in transmission line corridors and in close proximity to utility poles and as such have the potential to be affected by pole replacement.

Conclusion – Proposed Project Maintenance Activities

As described above, the Proposed Project includes implementation of an HPMP that would guide the treatment and protection of unevaluated cultural resources and historic properties in the APE. Specific management measures in the HPMP include:

- NRHP/CRHR evaluation of any unevaluated cultural resources that may be affected by adjacent maintenance activities;
- Avoidance measures, including establishment of buffers and protective barriers;
- Periodic site condition monitoring and monitoring of Project activities that have the potential to affect historic properties;
- Procedures to be implemented in the event a previously unknown cultural resource is identified;
- Stipulations that any maintenance work related to contributing elements of the Kaweah 3 Hydroelectric System Historic District would adhere to the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) (NPS 2017); and
- Requirements for consultation under Section 106 and CEQA to address any adverse effects to identified historic properties.

Additionally, under the Proposed Project, an annual environmental training program would be administered to educate personnel and contractors about cultural resources in the vicinity of the Project and measures to protect these resources during routine operation and maintenance activities.

Potential effects to cultural resources associated with maintenance activities would be managed by the HPMP in compliance with Section 106 and CEQA. Additionally, implementation of the environmental training program would enhance management of and protection of cultural resources in the Proposed Project APE during maintenance activities. Therefore, proposed maintenance activities would result in a less-than-significant impact related to cultural resources.

Potential Damage or Destruction from use of the Kaweah 2 Powerhouse River Access Parking Area

The Proposed Project does not include any developed recreation facilities. However, SCE maintains a small parking area adjacent to the Kaweah 2 Powerhouse and allows the public to use this parking area on a limited basis. The Kaweah 2 Powerhouse River Access Parking Area is paved with six striped parking stalls, one of which is identified as disabled accessible. Other than signage, the parking area does not currently include any amenities.

The Proposed Project includes recreation enhancements including the installation of a trash receptacle and Porta-Potty to service recreational amenities. SCE would continue to maintain the Kaweah 2 Powerhouse River Access Parking Area and allow the general public to use the parking area on a limited basis. This parking area is typically used by recreation visitors who park in the lot then walk to a small beach known locally as “Edison Beach”, located approximately 400 feet southeast of the parking lot, on the northeast bank of the Kaweah River. Edison Beach is not a formally developed recreation facility. Continued use of the parking area and beach has the potential to impact site P-54-004758.

Potential effects to site P-54-004758 associated with use of the Kaweah 2 Powerhouse River Access Parking Area and the adjacent Edison Beach area would be minimized with implementation of the HPMP as described above.

Therefore, the Proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. The impact would be less than significant.

However, SCE may be required by FERC to comply with BLM’s preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, construction of new fencing and water trough could potentially affect previously unknown historical resources. Any new fencing and addition of a trough would be evaluated under the HPMP.

Mitigation Measures: None Required.

b. Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact: Less than Significant

As outlined above, there are six NRHP/CRHR-eligible resources within the APE that have been identified as having the potential to be affected by Proposed Project activities and 20 unevaluated resources. Eligible resources include the Kaweah 3 Hydroelectric System Historic District, Kaweah 3 Flowline, Kaweah 3 Forebay, Kaweah 3 Powerhouse 2, P-54-000232, and P-54-001480/H.

The Proposed Project includes implementation of an HPMP that would guide the treatment and protection of unevaluated cultural resources and historic properties in the APE. Potential effects to cultural resources associated with Proposed Project maintenance activities would be managed by the HPMP.

Additionally, an annual environmental training program would be administered to educate personnel and contractors about cultural resources in the vicinity of the Proposed Project and measures to protect these resources during routine operation and maintenance activities.

Therefore, the Proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. The impact would be less than significant.

Mitigation Measures: None Required.

c. Would the Proposed Project disturb any human remains, including those interred outside of dedicated cemeteries?

Impact: Less than Significant

While there are no known formal cemeteries within the APE and there are no known human remains within the APE, there are prehistoric sites within the APE and the possibility of unmarked burials. There is a possibility of unearthing unmarked burials involving ground disturbance.

As required in the HPMP, if any human or burial remains are identified and/or disturbed by SCE personnel or contractors acting on behalf of SCE, work must stop at the location and the location must be secured. Remains would be treated in accordance with the National American Graves Protection Act (NAGPRA) and the federal land management agency's protocols for compliance with NAGPRA. The field personnel will notify the appropriate contact at the land management agency, and further steps will be determined in consultation with the agency, Native

American Tribes as required and / or allowed by the policies of the land management agency, and the county coroner.

Any human remains will be reported to the county coroner, as required by California state law (Public Resources Code, Section 7050.5), and the coroner will consult with the NAHC to determine the most likely descendants (MLDs) and inter-tribal jurisdiction. SCE will work with the land owner and the MLDs to determine tribal jurisdiction and develop a specific burial treatment plan to address burial remains, which may include determining whether to move or relocate the human burial remains or stabilize and keep burial remains in place, document location, and type of burial and file information with the NAHC.

With implementation of the HPMP and standard NAGPRA protocol, the Proposed Project is not expected to disturb any human remains, including those interred outside of dedicated cemeteries. The impact would be less than significant.

Mitigation Measures: None Required.

3.2.6 Energy

Environmental Issues	Impact Determination
a. Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than Significant Impact
b. Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

3.2.6.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address energy impacts.

3.2.6.2 Environmental Setting

SCE provides electrical services to the region through state-regulated public utility contracts. Over the past 15 years, electricity generation in California has undergone a transition. Historically, California has relied heavily on oil- and gas-fired plants to generate electricity. Spurred by regulatory measures and tax incentives, California’s electrical system has become more reliant on renewable energy sources, including cogeneration, wind energy, solar energy, geothermal energy, biomass conversion, transformation plants, and small hydroelectric plants. Unlike petroleum production, generation and transmission of electricity is usually not tied to the location of the fuel source and can be delivered great distances via the electrical grid. In 2018, 46 percent of the power delivered to customers by SCE came from carbon-free resources (renewable energy sources). SCE anticipates that by 2030, 80 percent of the power delivered to customers will be from carbon-free resources (Southern California Edison 2019).

Overall, in 2018 California’s per capita energy consumption was the fourth lowest in the United States. California’s per capita electricity consumption has remained relatively flat over the last 40 years (NRDC 2013). This is in part due to the work of the California Energy Commission (CEC), which was established in 1974 by the Warren-Alquist Act. The CEC is the primary energy policy and planning agency in the state. The CEC is responsible for ensuring a safe, resilient, and reliable supply of energy while reducing costs and associated environmental impacts of energy use. One of the ways the CEC achieves this reduction is through the enforcement of Title 24, California’s Energy Efficiency Standards, which has led to significant savings in energy use and billions in savings from reduced electricity bills.

3.2.6.3 Regulatory Setting

Federal

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act contains provisions designed to increase energy efficiency and the availability of renewable energy. The Act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act contains a comprehensive set of provisions to address energy issues, including tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector, state, and local governments promote dependable, affordable, and environmentally sound production and distribution of energy. Key issues addressed by this policy are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

State

Renewables Portfolio Standard

California's RPS applies to the Proposed Project's energy generation and use. The RPS is a result of Senate Bill (SB) 1078, which was signed in 2002 and mandated that utilities — investor, municipal and publicly owned — deliver 20 percent of their electricity from eligible renewable energy sources by 2017. In 2018, SB 100 was signed into law, raising the RPS requirements to 60 percent renewable energy sources by 2030 and 100 percent by 2045. Renewable energy sources that count toward RPS procurement requirements include solar, wind, biomass, geothermal, and small hydroelectric facilities (facilities that generate 30 MW or less) (CPUC 2017).

a. Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact: Less than Significant

The Proposed Project is the renewal of SCE's current license for a term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. The Proposed Project would continue to operate in run-of-river mode using existing facilities, deliver consumptive water to SCE's contracted water users, and continue to generate power for SCE customers. However, under the Proposed Project, the annual average generation would be 38,460 MWh, a reduction of 664 MWh.

The Proposed Project would not result in any unusual characteristics that could cause excessive long-term operational fuel consumption. Increased fossil fuel consumption could be required for the short-term use of construction equipment to install the BLM's cattle fencing and trough. The implementation of proposed new and modified operation and maintenance activities would be limited to a negligible increase in fuel consumption related to any additional vehicle trips. Therefore, the Proposed Project would not result in inefficient, wasteful, or unnecessary energy consumption. Impacts would be less than significant, and no mitigation measures are required.

Mitigation Measures: None Required.

b. Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact: No Impact

California has established RPSs that require SCE and other retail electricity sellers to procure 33 percent of total electricity sales from renewable energy sources by 2020 that increase to 60 percent by 2030.

The Proposed Project would result in an annual average generation of 38,460 MWh, a reduction of 664 MWh. However, as identified in the California Public Utilities Commission's (CPUC) 2019 California Renewables Portfolio Standard Annual Report, SCE has already met the 2020 RPS obligations and is currently forecasted to surpass future RPS requirements, which includes meeting the 60 percent by 2030 requirement (CPUC 2019).

Therefore, the Proposed Project's reduction of hydroelectric generation would not conflict or obstruct the goals established in the State's renewable energy plan. No impact would occur.

Mitigation Measures: None Required.

3.2.7 Geology and Soils

Environmental Issues	Impact Determination
a. Would the Proposed Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> <li data-bbox="256 478 1057 695">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?³¹ 	No Impact
<ul style="list-style-type: none"> <li data-bbox="256 726 1057 793">ii. strong seismic ground shaking? 	Less than Significant Impact
<ul style="list-style-type: none"> <li data-bbox="256 804 1057 892">iii. seismic-related ground failure, including liquefaction? 	Less than Significant Impact
<ul style="list-style-type: none"> <li data-bbox="256 903 1057 957">iv. landslides? 	No Impact
b. Would the Proposed Project result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact
c. Would the Proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	Less than Significant Impact
d. Would the Proposed Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	No Impact
e. Would the Proposed Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
f. Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than Significant Impact

³¹ Refer to California Geological Survey Special Publication 42.

3.2.7.1 Applicant Proposed Measures

To address potential impacts to geology and soils, the Applicant has proposed resource protection measures, and environmental management and monitoring plans as discussed below.

3.2.7.2 Environmental Setting

Geology

The Proposed Project is located along the western slope of the Sierra Nevada, ranging from approximately 2,585 feet above mean sea level (msl) at the Kaweah 1 Diversion Dam, to approximately 921 feet above msl at the Kaweah 2 Powerhouse. The upper Kaweah River Watershed (Watershed) is characterized by steep canyons with narrow “V-shaped” valley bottoms and steep, deeply-incised channels. The lower Watershed is characterized by rolling foothills with wider “U-shaped” valley bottoms and lower gradient and wider channels (floodplains).

The Watershed primarily consists of mixed Cretaceous (Upper Mesozoic) granites and granodiorites of the Sierra Nevada batholith that intruded coherent older masses of Mesozoic metasedimentary and metavolcanic rocks. Quaternary till and talus and recent alluvium are the principal surficial deposits. The Cretaceous granites underlying the Proposed Project facilities primarily consist of granodiorite. Small bodies of mafic intrusive igneous rocks, mainly gabbro, are also present. The Mesozoic metasedimentary and metavolcanic rocks are expressed as large generally elongated roof pendants, mapped as peridotite. Contacts between the granitic and metamorphic rocks are deeply dipping. The roof pendants trend northwest, reflecting the orientation of bedding and foliation within the metamorphic bodies (Sholes 1989). Bedrock outcrops occur in scattered locations; in a few areas, outcrops comprise up to 50 percent or more of the ground surface. Weathering of the granitic rock is variable; in some areas, the bedrock is completely decomposed to depths of 20 feet or more (FERC 1991). A relatively large deposit of unconsolidated and semi-consolidated Quaternary alluvium is present in the vicinity of Three Rivers, extending along the North Fork Kaweah River and the Kaweah River to the upper end of Lake Kaweah.

Structural Features

The most prominent structural features are the roof pendants that occur in the Watershed. These features consist of older rocks stratigraphically positioned on top of younger intrusive rocks. Massive, rounded, granitic domes that are typical of the Sierra Nevada occur in the Watershed. The most prominent of these is Moro Rock, which is located in the SNP between the Marble and Middle forks of the Kaweah River.

At least four caverns have been formed in the marble and limestone deposits in the Watershed. None are large, but all contain limestone cave features such as stalactites, stalagmites, and pillars (Norris and Webb 1990). The largest and most popular is Crystal Cove near the Giant Forest in the SNP.

Glacial Features

Glacial deposits (moraines and till) have been mapped in the upper portions of the Watershed. The most prominent glacial deposit is located on the Marble Fork Kaweah River upstream of the Marble Fork Diversion Dam, where Highway 198 crosses the river. Erosion of glacial deposits, such as till and moraines tend to contribute gravel-sized sediment to the streambeds downstream.

Aside from glacial deposits, unconsolidated sediments in the Watershed are generally limited to surface soils, and recent alluvium deposited in the stream and river courses and associated terraces. A relatively large deposit of unconsolidated and semi-consolidated Quaternary alluvium is present in the vicinity of Three Rivers, extending along the North Fork Kaweah River and the Kaweah River to the upper end of Lake Kaweah.

Seismicity

The Proposed Project is situated in an area with low historic seismicity. There are no known active faults or fault zones³² in the immediate vicinity of the Proposed Project. In addition, no Alquist-Priolo Earthquake Fault Zones³³ are identified (CDC 2015). The nearest known active fault is the Kern Canyon Fault, a northeast-southwest trending fault that extends from the mouth of the Kern River Canyon, through Lake Isabella and Kernville, through the SNP, terminating near Harrison Pass, approximately 32 miles east of the community of Three Rivers. Recent U.S. Army Corps of Engineers (USACE) field studies determined that the Kern Canyon Fault is active and capable of producing a 7.5-magnitude earthquake. The last movement on the Kern Canyon Fault appears to have occurred during the past 2,500 to 4,000 years, with an average interval between large earthquakes of about 3,200 years (USACE 2012). A moderate to large earthquake on this fault would likely produce ground shaking in the Proposed Project vicinity.

³² The California Department of Conservation (CDC) defines an “Active Fault Zone” as an area of related faults that have exhibited surface displacement within the last 11,000 years.

³³ The Alquist-Priolo Earthquake Fault Zoning Act was passed into law following the 1971 San Fernando earthquake. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep.

Soils

In general, the soils in the Proposed Project area can be classified into two categories as follows, based primarily on factors that pertain to the parent material from which the soil is derived:

- Soils formed on granitic bedrock are moderately deep and moderately coarse-grained. These soils are subject to erosion, particularly when devoid of vegetated cover (USACE 1996).
- Soils formed on metamorphic and volcanic bedrock are shallow, well drained, slightly acidic, rocky, and medium-textured. These soils are relatively stable and well vegetated.

Most soils within 0.5 mile of the East Fork Kaweah River and within 0.5 mile of the Kaweah River, including the soils underlying the Proposed Project facilities, were formed on granitic bedrock, meaning they are moderately deep and moderately coarse-grained and are subject to erosion, particularly when devoid of vegetated cover. The excessively well-drained nature of the soils can make revegetation difficult, especially on steeper slopes. Soils derived from metasedimentary rocks do not occur in the immediate vicinity of the Proposed Project or within 0.5 mile of a facility, but they do occur downstream near Three Rivers. Minor deposits of alluvium (stream deposits) and colluvium (material moved by gravity) occur at scattered locations throughout the area, primarily within the active stream channels and terraces.

One of the parameters used by the NRCS in assessing the susceptibility of a soil to erosion is the K factor. This factor assesses the susceptibility of the soil to sheet and rill erosion and is dependent upon the percentages of clay, silt, sand, and organic matter in the soil. In general, soils with low K factors are less susceptible to erosion and soils with high K factors are more susceptible to erosion. The K values for the soils underlying Proposed Project facilities range from 0.15 to 0.37, meaning they have low to moderate susceptibility to erosion when there is minimal vegetative cover (SCE 2019). Areas with good vegetative cover would have a lower overall potential for erosion.

3.2.7.3 Discussion

- a. Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project includes the continuation of existing operation and maintenance activities, compliance with environmental measures and plans that SCE has agreed to implement, and proposed license changes. The Proposed Project requires no construction of new facilities. Installation of a portable bathroom and trash receptacle at the Kaweah 2 Powerhouse River Access Parking Area is proposed. Routine inspection and maintenance activities would continue to be implemented consistent with the existing license.

There are no known active faults or fault zones¹ in the immediate vicinity of the Proposed Project. In addition, there are no Alquist-Priolo Earthquake Fault Zones identified in the Project vicinity (CDC 2015). The nearest known active fault is the Kern Canyon Fault located approximately 32 miles east of the community of Three Rivers. Recent USACE field studies determined that the Kern Canyon Fault is active and capable of producing a 7.5-magnitude earthquake. A moderate to large earthquake on this fault would likely produce ground shaking in the Proposed Project vicinity. However, it is not expected that fault rupture would occur since there are no mapped traces in the Proposed Project area. Therefore, the Proposed Project would not directly or indirectly cause substantial adverse effects related to rupture of a known earthquake fault.

Mitigation Measures: None Required.

ii. Strong seismic ground shaking?

Impact: Less Than Significant

The Proposed Project is situated in an area with low historic seismicity. The potential for ground shaking to occur in the Proposed Project vicinity is low due to dependence on a moderate to large earthquake on the Kern Canyon Fault, located 32 miles away.

The continuation of operation and maintenance activities would have no new impacts related to strong seismic ground shaking. Continued compliance with FERC's Dam Safety Program regulations (18 CFR Part 12D) would ensure that existing facilities are maintained to meet seismic regulations. The program requires SCE to retain an independent consultant, every five years, to inspect, review data (geology, seismicity, hydrology, etc.), and prepare Project safety reports that are submitted to FERC. These reports document detailed inspection of the Project facilities, review and evaluation of operations, monitoring of instrumentation, stability analysis, hydrology analysis, as well as geologic hazards, seismicity potential, and seismic safety analysis.

The Proposed Project requires no construction of new facilities but includes installation of a portable bathroom and trash receptacle, which would be maintained under current operation and maintenance activities. Therefore, the Proposed Project would not directly or indirectly cause substantial adverse effects related to strong seismic ground shaking. The impact would be considered less than significant.

Mitigation Measures: None Required.

iii. Seismic-related ground failure, including liquefaction?

Impact: Less Than Significant

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking and increased pore water pressures. In liquefaction, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in areas where the water table is deep. Clean granular materials, such as sand, have the highest potential for liquefaction. Fine grained sediments, such as silt and silty clay, and coarser sediments, such as gravel, have less potential for liquefaction.

The potential for damage related to liquefaction is greatest in areas underlain by saturated Holocene alluvial deposits, clean granular materials, and saturated soils. Most soils within 0.5 mile of the East Fork Kaweah River and within 0.5 mile of the Kaweah River, including the soils underlying the facilities, are excessively well-drained and formed on granitic bedrock. As a result, soils are moderately deep and moderately coarse-grained with little potential for liquefaction.

The continuation of operation and maintenance activities would have no impact on increasing potential for liquefaction to occur. The Proposed Project requires no construction of new facilities, and the installation of the recreational enhancements would occur on previously developed land. Therefore, due to the low potential for liquefaction and the Proposed Project's minimal activities, implementation of the Proposed Project would not directly or indirectly increase the potential for causing substantial adverse effects due to liquefaction.

Mitigation Measures: None Required.

iv. Landslides?

Impact: No Impact

A landslide is a cohesive mass of soil that comes into motion. Similarly, in a rockfall, blocks, stones, gravel, and sand move freely down a slope. The Proposed Project area is not located in a landslide susceptibility area (CGS 2020) or Seismic Hazard Zone (as discussed previously), and therefore, not prone to earthquake-induced landslides. In addition, the Proposed Project does not include the construction of any new facilities that would be subject to landslides and rockfalls.

Therefore, the potential substantial adverse effects, including the risk of loss, injury, or death from landslides and rockfalls are not expected and no impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project result in substantial soil erosion or the loss of topsoil?

Impact: Less Than Significant

Minimal erosion is present on the slopes surrounding the Proposed Project facilities. The K values for the soils underlying Proposed Project facilities range from 0.15 to 0.37, meaning they have low to moderate susceptibility to erosion when there is minimal vegetative cover (SCE 2019). Areas with good vegetative cover would have a lower overall potential for erosion. Potential erosion issues are primarily limited to: (1) operation and maintenance of the Proposed Project flowlines and forebays; and (2) use and maintenance of access roads and trails. Ongoing operation and maintenance activities are part of existing conditions. Erosion could occur as a result of flowline failure. Erosion could also occur during road and trail maintenance activities. Erosion of the trail or road surface could occur when the amount of runoff exceeds the capacity of the erosion control features, or when these features are damaged or blocked by debris. In addition, erosion can occur where concentrated runoff has been directed down natural slopes.

The Proposed Project would implement new and modified environmental measures, management, and monitoring plans. This includes the RTMP and SMECP, both in part, intended to address erosion control.

As described in the RTMP, major road and trail maintenance would be implemented in accordance with either Tulare County or Bureau of Land Management (BLM) standards, depending on land jurisdiction and in consultation with the respective agency, as applicable. BMPs would include measures to protect against potential soil instability, erosion, and sedimentation as a result of the activity. In addition, SCE regularly inspects the access roads and trails, including erosion control features, during normal maintenance activities, and makes repairs, as necessary. Minor repairs

are conducted on an as-needed basis and major repairs are implemented annually in consultation with the appropriate resource agencies (SCE 2019).

In the event of a flowline failure, which could cause sudden soil erosion, the SMECP would be implemented. The SMECP includes the following measures to reduce the potential for a failure in Project flowlines and reduce impacts in the event of a flowline failure.

- Flowlines would be inspected routinely to identify potential maintenance issues. Any maintenance issues identified would be addressed in a timely manner.
- In the event of flowline failure, flow would be shut off, as soon as possible, and diversions would be discontinued until repairs are completed.
- SCE would repair the flowline, as soon as practicable, considering engineering constraints, site conditions, and environmental protection.

SCE will submit annual reports to document the effectiveness of sediment management and erosion control activities implemented during the previous calendar year. The annual report will be reviewed by the BLM, State Water Board, and CDFW.

With implementation of the RTMP, SMECP, and BMPs, impacts related to substantial soil erosion or the loss of topsoil would be less than significant. Also refer to Section 3.2.11, Hydrology and Water Quality for a more detailed analysis of erosion.

Mitigation Measures: None Required

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

Impact: Less Than Significant

The Proposed Project requires no construction of new facilities and only the addition of a portable restroom and trash receptacle on an existing paved site, which would be considered a minor land disturbance. Based on relicensing studies, the Proposed Project is not located on a geologic unit or soil that is unstable (refer to License Application Volume 3, Exhibit E, Section 7).

Effects on Natural Channel and Hillslope Stability from Ongoing Project Operation and Maintenance Activities

Under the Proposed Project, forebay spills and draining of flowlines and forebays during Project outages and sediment management would continue to be

implemented. Draining of the flowlines and forebays during planned Project outages and sediment management, which includes opening low-level outlets to release water and flush sand and fine sediment from the facilities and into natural channels, would continue to be implemented.

Inherent channel and hillslope stability in the vicinity of the Proposed Project is controlled by the geologic setting and process history. The Proposed Project facilities are situated on highly resistant granitic rock. Unconsolidated sediments in the watershed are generally limited to surface soils, and recent alluvium deposited in the stream and river courses and associated terraces. Forebay spills associated with powerhouse outages, forebay and flowline maintenance, and/or other operational or maintenance practices occur into adjacent bedrock-bounded natural channels. Use of these channels has occurred for decades and initial scour to bedrock and associated hillslope adjustment has long since stabilized and is not likely to change due to periodic spills or use of low-level outlets to drain forebays for operation and maintenance activities.

Under the Proposed Project, forebay spills and sediment management activities would continue to be implemented as described in the SMECP. The SMECP includes sediment management activities, including methods to minimize erosion within the natural channels that could affect channel and hillslope stability. In particular, due to the size of the Kaweah 3 Forebay, water drained from the forebay would be slowly metered to minimize sediment disturbance in the forebay pool and the volume of water discharged to the natural channel and the Kaweah River. Therefore, continued use of natural channels for operation and maintenance activities that would be implemented under the Proposed Project would have a negligible effect on natural channel and hillslope stability.

Therefore, implementation of the Proposed Project would not increase risk of soil instability resulting in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.

Mitigation Measures: None Required.

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

Impact: No Impact

The Proposed Project would not result in direct or indirect risks to life or property as a result on expansive soil. The Uniform Building Code requires that special foundation design be considered if the soil expansion index is 20 or greater, as

indicated on Table 18–1–B. Expansive soils typically occur as a result of an increase in water content in the upper few feet from ground surface. The soils in the Proposed Project area were formed on granitic bedrock, meaning they are moderately deep and moderately coarse-grained and are well drained. In addition, the Proposed Project requires no construction of new facilities requiring a foundation. Therefore, no impact would occur related to expansive soils.

Mitigation Measures: None Required.

- e. Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project does not include the disposal of sewage in septic tanks or alternative waste water disposal systems. The Proposed Project would install a portable restroom that would be periodically pumped and the sewage disposed of at an appropriate treatment facility. Therefore, impacts related to soil adequately supporting septic tanks or alternative waste water disposal systems would not occur.

Mitigation Measures: None Required.

- f. Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

Impact: Less Than Significant

The prominent geologic features in the Watershed within the Proposed Project vicinity are roof pendants, massive granitic domes, and caverns formed in marble and limestone deposits. The Proposed Project implements no activities that would have an impact on these geological features. Therefore, no impact would occur related to destruction of a unique geologic feature.

There are no known unique paleontological resources or site present in the Proposed Project area. These items are usually found during excavation where it is difficult to determine what exactly was found and to determine whether or not it is “unique”. The Proposed Project does not include activities involving significant excavation. However, the HPMP requires that if any potentially unique paleontological or geologic features are found during ground disturbance, they must be examined to determine uniqueness. With implementation of the HPMP, the potential to destroy a unique paleontological resource or site would be minimized. The impact would be considered less than significant.

Mitigation Measures: None Required.

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3.2.8 Greenhouse Gas Emissions

Environmental Issues	Impact Determination
a. Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	No Impact
b. Would the Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No Impact

3.2.8.1 *Applicant Proposed Measures*

The Proposed Project does not include any environmental measures or plans that specifically address GHG impacts.

3.2.8.2 *Environmental Setting*

Over the past century, human activities have released large amounts of carbon dioxide (CO₂) and other GHGs into the atmosphere. The majority of GHGs are the by-product of burning fossil fuels to release energy in the form of heat. Deforestation, industrial processes, and some agricultural practices also emit GHGs into the atmosphere. GHGs trap solar energy in the atmosphere and cause it to warm. This phenomenon is called the greenhouse effect and is necessary to support life on Earth; however, excessive buildup of GHGs can change Earth's climate and result in undesirable effects on ecosystems, which affect human health and welfare (USEPA 2017).

Average temperatures in California have increased by about 1.8 degrees Fahrenheit (°F) since measurements were first recorded in 1895. California has experienced unprecedented temperatures from 2014 through 2017, with 2014 recorded as the warmest year on record. The minimum (nighttime temperatures), mean, and maximum temperatures are all increasing, with the minimum temperature increasing the fastest at 2.3°F per century (OEHHA 2020).

State Emissions Inventory

In 2019, California's GHG emissions inventory was updated to include the 2017 emissions data, which show that 2017 generated 424 million metric tons of CO₂e (MMTCO₂e) GHG emissions. The transportation sector produced 40.1 percent of the GHG emissions and remains the single largest generator in the state. The industrial sector produced 21.1 percent, and electric power generation produced 14.7 percent of the state's emissions inventory. Other major sectors of GHG emissions include

commercial and residential at 9.7 percent, agriculture and forestry at 7.6 percent, and refrigerants and wastes at 6.4 percent (CARB 2020).

More recently, the state's GHG emissions have declined. The 2017 GHG emissions are 5 MMTCO₂e lower than 2016 levels and 7 MMTCO₂e below the Assembly Bill (AB) 32 mandated 2020 GHG Limit of 431 MMTCO₂e (i.e., 1990 emission levels). A substantial part of the decreasing emissions are due to the reductions in GHGs from the electric sector, where, for the first time since tracking GHG emissions, electricity generation from zero and near zero GHG sources, including hydroelectric power, exceeded generation from GHG emitting sources (CARB 2020). The electric power sector has the biggest decrease in emissions starting at a little over 100 MMTCO₂e in 2000 to around 60 MMTCO₂e in 2017. This represents about a 40 percent decrease in GHG emissions. Zero and near zero GHG emissions sources are an important part of realizing GHG emissions reduction goals both now and in the future.

3.2.8.3 Regulatory Setting

Federal

On April 2, 2007, in *Massachusetts v. EPA*, 549 US 497, the Supreme Court found that GHGs are air pollutants covered by the CAA. It is this decision that led the way to developing regulations that limit the amount of GHGs emitted from vehicles and stationary sources (e.g., power plants and refineries). While the federal regulations play an important role in reducing GHGs at the national level, none of the federal regulations are applicable to this Proposed Project.

State

California has developed several regulations and goals to reduce GHG emissions within the state. Those relevant to the Proposed Project are summarized below.

Executive Order S-03-05

Executive Order (EO) S-03-05 was signed on June 1, 2005, and established the following GHG emission reduction targets: 1) reduce emissions to 1990 levels by 2020, and 2) reduce emissions to 80 percent below 1990 levels by 2050.

Assembly Bill 32

AB 32, the Global Warming Solutions Act, was signed August 31, 2006, and requires the state to reduce its GHG emissions to 1990 levels by 2020 as directed by EO S-03-05. AB 32 includes requirements to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, and directs CARB to develop a plan showing how the reductions were going to be achieved.

To meet this requirement, in 2008, CARB approved the Climate Change Scoping Plan, which presented key GHG reduction strategies and measures needed to reach the 2020 GHG emissions target. Measures included increased penetration of renewable electricity (33 percent by 2020). This is accomplished in part by the use of renewable energy sources, such as hydroelectric power, to decrease the state's reliance on fossil fuels and reduce GHG emissions. As appropriate, the Climate Change Scoping Plan also acknowledges the importance of providing sufficient transmission lines to allow integration of renewable energy.

The Climate Change Scoping Plan is updated every five years. The first update, approved in 2014, described the progress California made to date on achieving the 2020 GHG emissions target and laid the foundation for continued reductions to meet the longer term 2050 goal. This included energy sector actions and policies to build state-of-the-art energy generation and supply and distribution systems that are clean, affordable, and reliable.

Executive Order B-30-15

EO B-30-15 was signed April 29, 2015, and established the intermediate GHG emission reduction target of 40 percent of 1990 levels by 2030, which was mandated into law with the signing of SB 32 in 2016. This EO also directed CARB to update the Climate Change Scoping Plan and quantify the state's 2030 GHG reduction goal.

The second update to the Climate Change Scoping Plan, titled California's 2017 Climate Change Scoping Plan, was completed in November 2017. This update outlines the strategy to achieve the 2030 GHG emissions reduction target. The 2017 Climate Change Scoping Plan update builds upon the previous plans' successes, while identifying new strategies for meeting the GHG emissions reduction targets. The 2017 Climate Change Scoping Plan continues focus on the state's largest stationary and mobile sources of GHG emissions (ARB 2017).

Senate Bill 32

Senate Bill (SB) 32 was signed September 8, 2016, and sets into law the mandated GHG emission reduction target established by EO B-30-15.

Executive Order B-55-18

EO B-55-18 was signed September 16, 2018, and established a new target of statewide carbon neutrality no later than 2045, with negative net emissions thereafter. This includes reviewing opportunities to remove carbon from the atmosphere, such as with sequestration in natural and working lands.

Renewables Portfolio Standard

With the passage of Senate Bill (SB) 1078 in 2002, the California RPS Program was established. This program initially required 20 percent of electricity retail sales to be served by renewable energy sources by 2017; SB 107, passed in 2006, changed this mandate to 20 percent by 2010. SB X1-2, passed in 2011, extended the RPS procurement requirements to 33 percent by 2020. SB 350, passed in 2015, extended the RPS procurement requirements further to 50 percent by 2030; SB 100, passed in 2018, increased this mandate to 60 percent by 2030. Renewable energy sources that count toward RPS procurement requirements include solar, wind, biomass, geothermal, and small hydroelectric facilities (facilities that generate 30 MW or less [such as the Proposed Project]) (CPUC 2017).

To ensure electricity retail sellers, including SCE, are on track to meet their RPS obligations, the CPUC provides annual reports to the state legislature. In the most recent report titled “2019 California Renewables Portfolio Standard Annual Report,” the RPS procurement target of 33 percent by 2020 was met by SCE in 2019 and is expected to have excess procurement for the next six years. This excess procurement may be applied to future compliance periods. In fact, SCE has so much excess eligible RPS procurements that they chose not to conduct annual RPS solicitations in 2016, 2017, 2018, 2019, nor do they plan to undertake solicitations for renewables in 2020. Overall, SCE has met and exceeded the 2020 RPS obligations and is well on its way to meeting the RPS procurement mandate of 60 percent by 2030 (CPUC 2019). In addition, SCE is forecasted to deliver 100 percent carbon-free power to customers by 2045 (SCE 2019).

Local

On a local basis, agencies in California are in the process of implementing identified strategies to reduce GHG emissions. On December 11, 2018, Tulare County adopted the Tulare County Climate Action Plan (CAP). The CAP is a guidance document for Tulare County to reduce GHG emissions and adapt to the potential effects of climate change and is an implementation measure of the 2030 General Plan Update. The CAP serves as the threshold of significance by which all applicable development within the County will be reviewed. Projects that are consistent with the CAP checklist would be considered to have a less than significant cumulative impact on climate change. The CAP Consistency checklist focuses on new residential, commercial, and industrial land uses with efforts aimed at increasing alternative modes of transportation, reducing vehicle miles traveled, energy efficiency and self-generation, water conservation, waste reduction and recycling, increased densities, electric vehicle charging capabilities, and renewable energy generation. None of the CAP measures are directly applicable to the Proposed Project.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) does not have an established numeric significance threshold. Instead they have a tiered approach for determining significance that includes demonstrating compliance with local GHG reduction plans or following performance based standards (SJVAPCD 2015).

3.2.8.4 Discussion

a. Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact: No Impact

Under the Proposed Project, SCE would implement existing environmental measures, management and monitoring plans required to meet FERC license articles and associated orders that are ongoing and considered as routine operation and maintenance of the Proposed Project. In addition, several modifications to existing measures and plans are proposed, as well as new environmental measures and plans designed to protect, maintain, or enhance environmental and cultural resources over the term of the new license. The Proposed Project would not create a new permanent stationary source or develop a land use that would be inconsistent with the Tulare CAP consistency checklist.

Maintenance trips associated with the recreation enhancements and special-status bat species protection would be incorporated into the existing maintenance schedule. Though not anticipated, there is the potential for minimal additional vehicle trips per year for maintenance and for protection of special-status bat species at the Kaweah 2 Powerhouse. Also if required, the new fencing and water trough would result in short-term construction trips. If additional trips are later determined to be necessary there is the potential for increased greenhouse gas emissions. These trips however, would result in a minimal increase in potential vehicle emissions and have a negligible effect on generation of GHG emissions.

In addition, hydroelectric generation is a reliable, efficient, economical, and less polluting source of energy resulting in low GHG emissions. Although considered a relatively small hydroelectric project, energy generated from the Proposed Project is used to meet California's energy demand, renewable energy goals, and provide a source of energy with low GHG emissions. Therefore, the Proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. No impacts would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact: No Impact

As mentioned above, the California's RPS program, which was partly established to reduce emissions of GHGs from the electric sector, requires SCE to procure 33 percent of total electricity sales from renewable energy sources by 2020, and 60 percent by 2030. SCE met the 33 percent target in 2020 and is expected to have excess procurement for the next six years. SCE has exceeded the 2020 RPS obligations and is well on its way to meeting the RPS procurement mandate of 60 percent by 2030 (CPUC 2019). The Proposed Project would be supportive of the California RPS Program by continuing to provide energy with low GHG emissions.

In addition, while none of the Tulare County CAP consistency checklist questions are applicable, the Proposed Project would support the GHG emission reduction strategies identified by Tulare County CAP and General Plan policies, by providing renewable energy with low GHG emissions. Furthermore, as mentioned above, maintenance of the proposed recreation enhancement would be incorporated into the existing maintenance schedule and, therefore, is not expected to require any additional vehicle trips. Though not anticipated, there is the potential for minimal additional vehicle trips per year for maintenance and protection of special-status bat species at the Kaweah 2 Powerhouse, and vehicle trips associated with BLM's requested cattle fencing and trough. However, the increase in GHG emissions would be negligible.

Therefore, the Proposed Project would have no impact on any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Mitigation Measures: No Impact

3.2.9 Geomorphology

Environmental Issues	Impact Determination
a. Would the Proposed Project cause substantial change in sediment supply/recruitment?	Less than Significant Impact
b. Would the Proposed Project cause substantial change in sediment transport capacity?	Less than Significant Impact
c. Would the Proposed Project cause a substantial change in channel morphology, including dimensions (width, depth), channel pattern/planform (e.g. straight, meandering, sinuosity), or bed material size?	Less than Significant Impact
d. Would the Proposed Project cause substantial change in channel sediment storage (sedimentation, aggradation/scour)?	Less than Significant Impact

3.2.9.1 *Applicant Proposed Measures*

To address potential impacts to geomorphology, the Applicant has proposed resource protection measures, and environmental management and monitoring plans as discussed below.

3.2.9.2 *Environmental Setting*

The Kaweah River and East Fork Kaweah River in the Proposed Project area are steep, coarse-bedded rivers (e.g., abundant large cobbles, boulders, and bedrock) with finer substrate (sand) in the pools or in the velocity shadow of the larger substrate. Relicensing studies found very little gravel. Channel geomorphology and sediment transport dynamics in the Kaweah River is partially controlled by the resistant channel boundaries formed by the presence of boulders and bedrock, which results in limited sedimentation in the bypass reaches. Seasonally-transported bedload (e.g., sand, gravel, cobble) is found in relatively rare, discrete deposits mantling, or covering, the coarse channel bed material, which is much less frequently transported. Granitic sand is widespread with more expansive deposits in some low gradient areas. The sand is readily mobilized, as observed in the field during any modest flow, and larger episodes of sand transport are likely semi-annual (SCE 2019).

The bypass reaches associated with the Proposed Project include:

- Kaweah River from the Kaweah 2 Diversion to the Kaweah 2 Powerhouse Tailrace (4.1 miles); and

- East Fork Kaweah River from the Kaweah 1 Diversion to the confluence with the Kaweah River (4.7 miles).

Bypass Reach Geomorphology

Figure 3–3 shows the geomorphic classifications along the bypass reaches, and the location of the diversions, powerhouses, and river mile stationing. The following sections summarize the bypass reach geomorphology.

Kaweah River

The Kaweah River bypass reach is comprised of two sub-reaches that have similar geomorphic and hydrologic characteristics: (1) from the Kaweah 2 Diversion Dam to the confluence with the East Fork Kaweah River (0.55 mile); and (2) from the confluence with the East Fork Kaweah River to the Kaweah 2 Tailrace (3.25 miles).

The Kaweah River bypass reach, immediately downstream of the Kaweah 2 Diversion to the confluence with the East Fork Kaweah River, has an overall 3 percent gradient. The channel has short alternating segments dominated by bedrock, step-pool formations, or boulder cascades. The substrate is primarily comprised of large and small boulders.

Downstream of the confluence with the East Fork Kaweah River, the Kaweah River channel gradient is more moderate, approximately 2 percent. The bypass channel is primarily comprised of pool-riffle and plane-bed segments (0.4 to greater than 1 mile in length) interspersed with short bedrock segments (typically 0.1 mile or less in length). Boulder-sized substrate dominates in the first 2.6 miles downstream from the East Fork Kaweah River confluence with the Kaweah River (River Mile [RM] 8.4 to RM 5.8), then transitioning to cobble-dominated substrate downstream to the Kaweah 2 Tailrace.

East Fork Kaweah River

The channel gradient of the East Fork Kaweah River bypass reach is 5 percent. This reach has short alternating segments dominated by bedrock, step-pool formations, or boulder cascades. The channel has frequent bedrock/large boulder exposures usually with coarse steps, with shorter channel segments where smaller sized material collects (cobble/gravel) or there is a shallow mantling of alluvial material. These relatively small depositional features typically occur at drainage confluences. The channel contains more cobble and gravel-sized material in the 0.4-mile segment immediately upstream of the confluence with the Kaweah River.

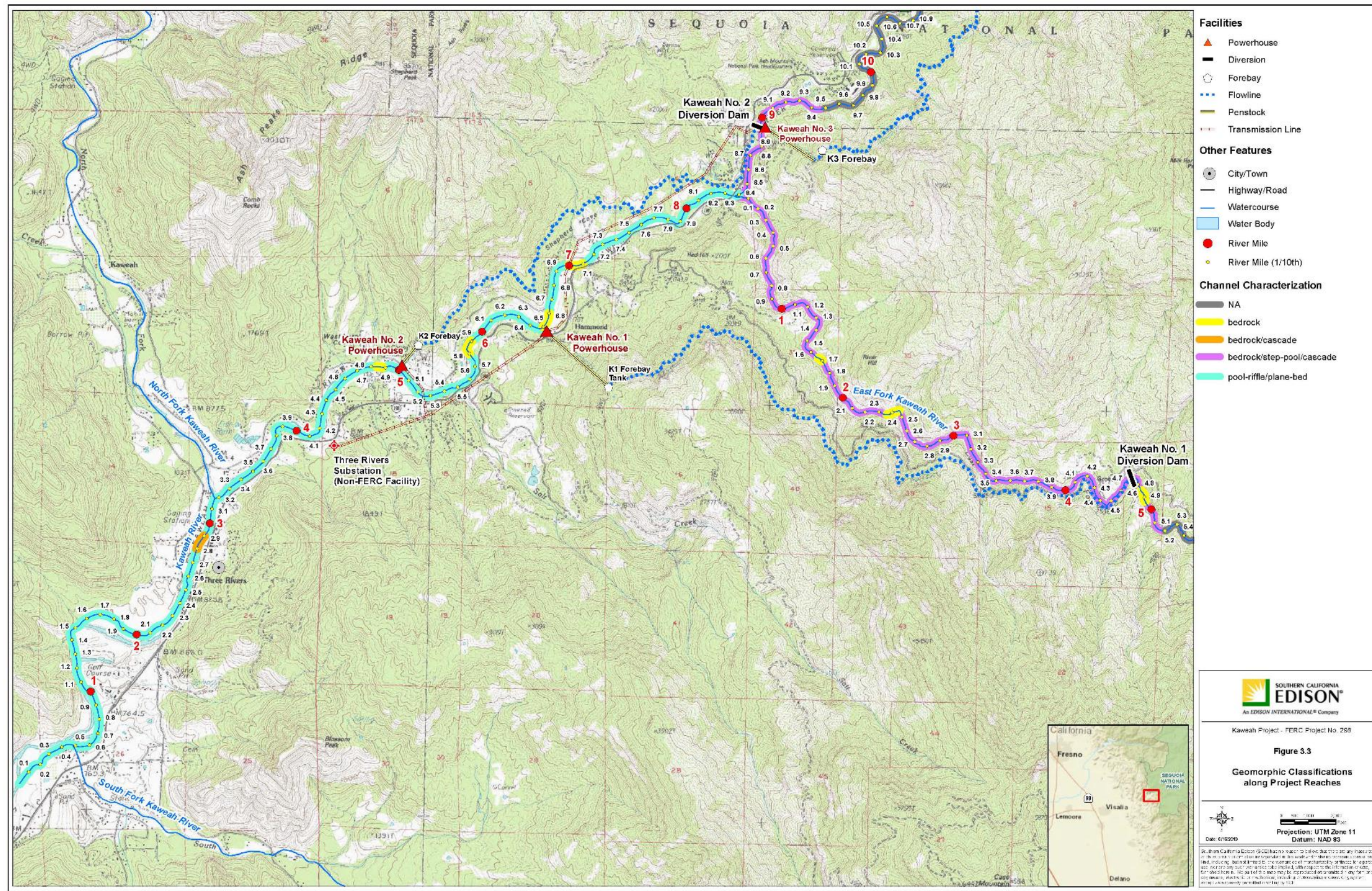


Figure 3-3. Geomorphic Classifications along Project Reaches

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Hydrology Associated with Geomorphically Significant Flows

Relicensing studies analyzed annual peak flows for each Project bypass reach, comparing the frequency and duration of existing and unimpaired flows using discharge data from water years 1994 to 2018. The analysis found only small differences in the annual peak flows (SCE 2019).

Flows that are most responsible for maintaining the channel morphology occur about twice out of every three years (1.5-year return interval flood) because this is the discharge that transports the largest portion of the mean annual bed material load over the long-term. The 1.5-year return interval flood is often equated with the “bankfull discharge” or “effective discharge” (Andrews and Nankervis 1995; Dunne and Leopold 1978). Higher magnitude floods transport a greater sediment volume in a single flood event, but they do not occur very often and therefore, over the long term do not have as great an effect on sediment transport or on maintaining the channel morphology. For streams with natural, unregulated flow regimes, discharges less than the 1.5-year return interval flow are typically insufficient to transport the majority of sediments, and therefore, have relatively little influence on maintaining the channel morphology.

The magnitude and duration of 1.5-year instantaneous peak flows were compared for each bypass reach for existing Project and unimpaired flows (Table 3–13). The differences are all small, no greater than 3.5 percent, reflecting the run-of-river operations that has negligible storage capacity to reduce the magnitude of geomorphically significant flows. Under existing conditions, the average number of days each year that exceed the unimpaired 1.5-year flow event ranged from 1.2 to 2.6 days less than under unimpaired conditions. This is a 7 to 13 percent reduction in the duration of flows with existing project operations compared with unimpaired.

Initiation of Sediment Transport

Relicensing studies examined the flow required to initiate sediment transport in the sand (0.1 to 0.2 inch), gravel (0.2 to 3 inches), cobble (3 to 12 inches) particle size ranges (SCE 2019). The discharge at which mobilization occurs for 10 percent of the sand, gravel, and cobble substrate sizes within the wetted portion of the channel cross-section in each reach was used as the “initiation of motion” threshold based on the hydraulic modelling analysis.

Table 3-13. Existing and Unimpaired Instantaneous Peak 1.5-Year Flow Magnitude and Average Annual Duration of Flows Exceeding 1.5-Year Flow

Study Reach	Existing Q1.5 (cfs)	Unimpaired Q1.5 (cfs)	Difference (percent)	Existing Duration Greater Than Q1.5 (days)	Unimpaired Duration Greater Than Q1.5 (days)	Difference (percent)
Kaweah River downstream of Powerhouse 3 and upstream of East Fork Kaweah River	1,632 cfs	1,684 cfs	3.0 percent	17.2 days	19.8 days	13 percent
Kaweah River downstream of East Fork and upstream of Powerhouse 1	2,365 cfs	2,451 cfs	3.5 percent	12.8 days	14.6 days	12 percent
Kaweah River downstream of Powerhouse 1 and upstream of Powerhouse 2	2,434 cfs	2,451 cfs	0.7 percent	14.0 days	16.1 days	13 percent
East Fork Kaweah River downstream of Kaweah 1 Diversion	717 cfs	737 cfs	2.7 percent	17.2 days	18.4 days	7 percent

Source: SCE License Application, Exhibit E (SCE 2019)

As expected, the smaller substrates (sand, gravel) move at lower flows and the matrix substrate of the channel (e.g., cobbles) moved at higher flows (Table 3–14). Sand moves in all bypass reaches with flows well less than the Q 1.5 year³⁴ (whether calculated as an instantaneous peak discharge or on an average daily basis). Gravels also move in all bypass reaches with flows less than the Q 1.5; however, the maximum flow modelled in the East Fork Kaweah was 240 cfs, but no gravel or cobble moved in this reach at 240 cfs. These gravel and cobbles, however, were only present in the margin of the channel.

Cobbles move near the average daily Q 1.5 year flow in all bypass reach segments, except for the Kaweah River section downstream of the East Fork confluence to the Kaweah 1 Powerhouse. In that bypass reach 1,900 cfs was the highest flow modelled, but less than 10 percent of the cobbles moved at this discharge. Therefore, it was determined from the modelling results that the average daily Q1.5 (1,618 cfs) would be insufficient to move cobble, but it could not be determined whether the instantaneous peak Q1.5 discharge (2,365 cfs) would be sufficient to initiate motion for cobble sizes.

Overall, there is little difference between the existing and unimpaired average daily or instantaneous peak Q1.5 flows; therefore, there is little difference between the frequency of bed material transport under existing conditions versus unimpaired conditions.

Sediment Conditions in the Bypass Reaches

The amount of residual fine sediment in pools in the bypass reaches was characterized using the V^* index developed by the U.S. Department of Agriculture-Forest Service (USDA-FS) (Hilton and Lisle 1993). Fine sediment in pools was limited to a small proportion of the residual pool volume. The volume weighted average V^* for each reach was 0.12 or less, a relatively low value, and less than the comparison reaches sampled upstream of the bypass reaches. Detailed quantitative V^* results are reported in the License Application Exhibit E (SCE 2019).

The majority of the pools contained bedrock or boulders with cobble and/or coarse gravels often, though not always, observed within each of the pools surveyed. In most cases, the fine sediment was a thin coating (less than 0.1 foot thick) located within the interstitial spaces of the coarse bed material. At pool locations where thicker fine sediment deposits were present, the deposits were located primarily along the margins of the residual pool in slack water areas, or in the velocity shadow of larger boulders.

Bulk sediment samples were collected from trout spawning habitat in the bypass reaches to determine the particle size distribution (composition) and fine sediment content of potential spawning gravels. Fine sediment within potential spawning gravels

³⁴ Q 1.5 is the commonly used hydrologic short-hand notation for “1.5-year return interval flow”.

were generally within defined criteria to support high reproductive success (SCE 2019). Spawning gravels were generally very limited in the bypass reaches due to the high gradient of the rivers.

3.2.9.3 Discussion

This section addresses potential impacts related to channel geomorphology associated with changes under the Proposed Project that control fluvial processes (flow magnitude and duration, sediment supply, and sediment transport) or in association with potential changes to channel morphology (channel dimensions, planform, bed material particle size, and channel sediment storage). Discussion of existing ongoing Project operation is included in the analysis to provide an understanding of the changes under the Proposed Project.

Proposed and existing Project operations and management activities that could affect channel geomorphology include:

- MIF releases
- Ramping rates
- Forebay spills and forebay draining during outages³⁵
- Sediment Management activities
 - flushing Kaweah 1 sandbox and Forebay Tank ³⁶
 - flushing Kaweah 2 Forebay ³⁷
 - sediment removal Kaweah 2 Diversion Intake ³⁸sediment removal Kaweah 3 Forebay ³⁹

³⁵ Includes Kaweah 1 Forebay Tank, Kaweah 2 Forebay, and Kaweah 3 Forebay.

³⁶ Kaweah 1 intake outlet at the sandbox is opened during high flows to flush sand into the East Fork Kaweah River channel, larger substrate is removed and placed back into the channel during fall maintenance outage. The Forebay tank is opened during regular operations to flush sand into an adjacent natural channel.

³⁷ Kaweah 2 Forebay opened during normal operations to flush sand into natural channels.

³⁸ Kaweah 2 Intake removal of large size material obstructing intake grates, to be placed downstream of diversion structure

³⁹ Heavy equipment to remove sediment, usually sand and silt, from forebay about every 5 years. Location of removed sediments to be determined in consultation with BLM.

Table 3–14. Summary of Discharge (Q) at 10 percent Incipient Motion for Sand, Gravel, Cobble in Project Reaches for Existing and Unimpaired Q1.5 Year Recurrence Interval

Study Reach	Sand Q 10 percent (cfs)	Gravel Q 10 percent (cfs)	Cobble Q 10 percent (cfs)	Existing Average Daily Q1.5 and Peak Q1.5	Unimpaired Average Daily Q1.5 and Peak Q1.5
Kaweah River downstream of Powerhouse 3 and upstream of East Fork Kaweah River	112 cfs	277 cfs	848 cfs	Average Daily Q1.5 = 985 Peak Q1.5 = 1,632	Average Daily Q1.5 = 1,069 Peak Q1.5 = 1,684
Kaweah River downstream of East Fork and upstream of Powerhouse 1	567 cfs	751 cfs	>1900 cfs ¹	Average Daily Q1.5 = 1,618 Peak Q1.5 = 2,365	Average Daily Q1.5 = 1,658 Peak Q1.5 = 2,451
Kaweah River downstream of Powerhouse 1 and upstream of Powerhouse 2	295 cfs	482 cfs	1,677 cfs	Average Daily Q1.5 = 1,583 Peak Q1.5 = 2,434	Average Daily Q1.5 = 1,658 Peak Q1.5 = 2,451
East Fork Kaweah River downstream of Kaweah 1 Diversion	207 cfs	>240 ² cfs	>240 cfs ²	Average Daily Q1.5 = 431 Peak Q1.5 = 717	Average Daily Q1.5 = 454 Peak Q1.5 = 737)

Source: SCE License Application, Exhibit E (SCE 2019)

NOTES:

1. Less than 10 percent of cobbles moved at the highest flow modelled 1,900 cfs
2. No gravel or cobble moved in this reach at flows less than the highest flow modelled 240 cfs. Gravel and cobble were only present in the margin of the channel, and much higher flows would be needed to initiate motion.

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a. Would the Proposed Project cause substantial change in sediment supply/recruitment?

Impact: Less Than Significant

Proposed Project operations that could influence sediment supply and recruitment to the bypass reaches are associated with forebay spills and draining of forebays during outages, or to sediment management activities (as listed above). All have the potential to cause erosion in the natural spill channels below these Project facilities, which route water and sediment downstream to the Kaweah River and East Fork Kaweah River (from the Kaweah 1 sandbox). MIF releases and ramping rates are Proposed Project operations that do not have any physical nexus to influence sediment supply, although these operations could affect sediment transport rates (addressed under the next impact assessment issue below).

Under the Proposed Project, sediment management activities would continue to be implemented at Project facilities to prevent deposits of sediment from building up or blocking Project intakes. Sediment management activities at the intakes include sediment removal/flushing at the Kaweah 1 Intake sandbox and sediment removal at the Kaweah 2 Intake.

The low-level outlet at the Kaweah 1 Intake sandbox would be routinely opened during high flows to minimize accumulation of sand/fine sediment and transport it back into the active stream channel. If larger substrate becomes trapped in the sandbox, it would be removed and placed along the margin of the active channel during the fall maintenance outage where it can be entrained into the channel during high-flow events. At the Kaweah 2 Intake, during high-flow events, large boulders and rocks accumulate on the intake grate obstructing flow into the intake and, at times, allowing sediment to build up near the intake. When necessary, this rock debris would be removed and placed downstream of the diversion structure to improve flow into the intake and prevent facility damage.

Sediment management at intakes would occur during high flows when natural sediment transporting processes are typically occurring. Removed sediment would be placed adjacent to the natural channel to allow for entrainment and routing during high flows. Generally, the volume of sediment removed is relatively small compared to the sediment volume and total flow carried by the Kaweah River, is composed of native material, and would not become entrained and enter the active channel until high flows occur when sediments are naturally recruited and transported. Therefore, the small sediment supply added by this management activity would be negligible compared with the supply naturally recruited and carried by the bypass channels. As such, the Proposed Project would have a negligible effect on sediment supply and recruitment.

Under the Proposed Project, forebay spills, and forebay draining/flushing sediment management activities would continue to be implemented as described in the existing SMECP which is generally consistent with existing operations. The SMECP memorializes existing sediment management activities, including methods to minimize erosion within the natural channels.

Use of the natural receiving channels during spills and opening low-level outlets to drain forebays has been ongoing for decades. Although some erosion still occurs in these natural drainages based on field observations for relicensing studies, the channels are predominantly stable since most of the erosion and subsequent scour to bedrock that is exposed today occurred historically and they have long since stabilized (SCE 2019). In addition, the total volume of sediment mobilized during spills and operations activities is small relative to background sediment volume of the Kaweah River. Any sediment released into the natural drainages is dispersed along the channel as they are periodically mobilized and transported downstream to the Kaweah River by periodic spills and maintenance releases, so that the volume of sediment reaching the river, if any, is well-moderated over time. The relative volume of water discharged compared to the Kaweah River is small. In particular, due to the size of the Kaweah 3 Forebay, water drained from the forebay would be slowly metered to minimize sediment disturbance in the forebay pool and the volume of water discharged to the natural channel and thence routed to the Kaweah River.

Therefore, continued use of natural channels for Proposed Project operation and maintenance activities that would be implemented under the Proposed Project, including implementing the existing SMECP, would have a negligible effect on sediment supply and recruitment in the Kaweah River or East Fork Kaweah River. The impact would be less than significant.

Mitigation Measures: None Required.

b. Would the Proposed Project cause substantial change in sediment transport capacity?

Impact: Less Than Significant

Proposed Project operations that could influence sediment transport capacity include MIF releases and ramping rates.

Under the Proposed Project, MIF releases to the bypass reaches would be increased during select months of Dry and Normal water year types to enhance

habitat for aquatic species and to better simulate a more natural hydrograph. MIFs⁴⁰ would modestly increase existing baseline flows but would remain substantially below the Q1.5-year “effective discharge” (see Table 3-13), as well as below the threshold for incipient motion for sand, or any of the other sediment size classes in any of the bypass reaches (see Table 3–14). Consequently, the MIF under the Proposed Project is well below the threshold to have any influence on sediment transport capacity.

The existing up- and down-ramp requirement is no more than 30 percent of the flow per hour at the Kaweah 1 and 2 Diversions (FERC License Article 404). Under the Proposed Project, changes in up-ramping rates have the potential to alter the magnitude and timing of initiation or cessation of sediment transport. There is no change proposed for the down-ramping requirement at either diversion. For Kaweah 1 Diversion, the Proposed Project would eliminate the existing up-ramp requirement. For the Kaweah 2 Diversion the Proposed Project up-ramping flows would not increase greater than 25 cfs per hour when the bypass streamflow is ≤ 40 cfs. When flows are ≥ 40 cfs there is no up-ramping requirement.

Since there is no change proposed in the down-ramp requirements at either diversion, the following impact assessment addresses whether the existing down-ramping requirement is protective of maintaining sediment transport in the bypass reaches. Since there is a change proposed for the up-ramp requirements, the impact assessment addresses whether the Proposed Project would maintain sediment transport capacity.

The Q1.5 peak flow threshold that transports the most sediment over the long-term and thereby maintains channel morphology in the East Fork Kaweah River downstream of Diversion 1 is 717 cfs (see Table 3–13). The Q1.5 peak flow threshold that transports the most sediment over the long-term ranges from 1,632 cfs to 2,434 cfs in the various segments of the Kaweah River bypass reach downstream of Kaweah Diversion 2. These geomorphically significant flow thresholds for sediment transport are compared with the ramping requirements under both existing operations and under the Proposed Project to determine if sediment transport rates in the bypass reaches may be substantially altered and impact channel geomorphology.

For the East Fork Kaweah River below the Kaweah 1 Diversion, ramping cannot be adjusted by greater than 24 cfs per hour, which is the physical capacity of the diversion. When flows are 80 cfs into the East Fork bypass reach, the discharge can

⁴⁰ Minimum instream flows would at maximum be no greater than 30 cfs in the Kaweah River bypass reach downstream of Kaweah 2 Diversion, and no greater than 20 cfs in the East Fork Kaweah bypass reach, regardless of water year type or month.

be down-ramped by the diversion up to a maximum 56 cfs, which is a 30 percent reduction in the 80 cfs flow, just within the ramping criteria. Thus, the diversion infrastructure cannot physically exceed the down-ramping criteria by more than 30 percent of the flow whenever the bypass discharge is greater than 80 cfs.

When flows into the bypass reach are less than 80 cfs, the diversion rate must be controlled over hourly increments so as not to violate the 30 percent down-ramp criteria. This 30 percent requirement would be maintained under the Proposed Project. The situation is similar in regards to up-ramping, which under existing conditions could allow an 80 cfs discharge into the bypass reach to increase up to the maximum diversion capacity of 24 cfs to 104 cfs ($80\text{cfs} + 24\text{cfs} = 104\text{ cfs}$), which represents a 30 percent increase in the flow, just within the existing ramping criteria. When incoming flows are any greater than 80 cfs, the 30 percent up-ramping criteria is always met no matter how the diversion is operated. When flows are less than 80 cfs, the up-ramping criteria could be exceeded by additional flow released by cessation of diversions, so that operations must be controlled to maintain the 30 percent up-ramp rate. Under the Proposed Project, there would be no ramp-up requirement so that the diversion could go from 24 cfs to 0 cfs, thereby increasing flows into the bypass reach up to the maximum of 24 cfs from the MIF requirement.

The maximum 24 cfs diversion capacity would have a negligible effect on either up-ramping or down-ramping of flows relative to the geomorphically significant range of the 717 cfs effective discharge (the Q1.5 peak flow for the East Fork Kaweah). Consequently, during periods when flows are sufficient to transport sediments, the rate changes in discharge attributable to up-ramping or down-ramping at the Kaweah 1 Diversion relative to the sediment transporting discharge in the bypass reach would have a negligible effect on flow and therefore on sediment transport rates.

For the Kaweah 2 Diversion, ramping cannot be increased (up-ramp) or decreased (down-ramp) by greater than 87 cfs per hour which is the physical capacity of the diversion. When flows are 290 cfs into the bypass reach, the discharge could be down-ramped up to 203 cfs ($290\text{ cfs} - 87\text{ cfs} = 203\text{ cfs}$), which is a 30 percent reduction in the 290 cfs flow, just within the ramping criteria. Thus, the diversion infrastructure cannot physically exceed 30 percent of the flow whenever the bypass discharge is greater than 290 cfs. The situation is similar in regards to up-ramping, which under the Proposed Project (shall not increase flows by greater than 25 cfs/hr when flows are less than 40 cfs) could increase flows by up to a maximum of 87 cfs over the incoming discharge to the bypass reach. When flows are 290 cfs into the bypass reach, the discharge could be ramped up to a maximum 377 cfs. During periods of sediment transport, up-ramping and down-ramping rates that can be controlled by the Kaweah 2 Diversion are small relative to the geomorphically significant discharge in the various segments of the Kaweah River bypass reach

(Q1.5 peak flow ranges from 1,632 cfs to 2,434 cfs). The maximum 87 cfs diversion capacity would have a negligible effect on either up-ramping or down-ramping of geomorphically significant flows. Consequently, during periods when sediment transport is occurring, the rate changes in discharge attributable to up-ramping or down ramping at the Kaweah 1 Diversion relative to discharge in the bypass reach would have a negligible effect on sediment transport rates. This is applicable to both existing conditions under the Proposed Project.

The up-ramping criteria proposed for Kaweah 2 Diversion applies to when flows are <40 cfs. This flow threshold is substantially lower than the geomorphically significant flow range. Consequently, the up-ramping difference between existing operations and the Proposed Project is inconsequential relative to the flow magnitude that controls sediment transport. Therefore, the existing ramping rates under current operations, and the modified ramping rates to be implemented under the Proposed Project would have a negligible effect on sediment transport rates. The impact would be less than significant.

Mitigation Measures: None Required.

- c. Would the Proposed Project cause substantial change in channel morphology including channel dimensions (width, depth), channel pattern/planform (e.g., straight, meandering, sinuosity), or the dominant bed material size?**

Impact: Less Than Significant

The East Fork Kaweah River bypass reach, as well as a portion of the Kaweah River bypass reach downstream from the Kaweah 2 Diversion, is dominated by bedrock, step-pool formations, or boulder cascades. These channel types are highly resistant to changes in channel dimensions, pattern, or planform (Montgomery and Buffington 1997), owing to their armored boundaries and steeper gradients. The section of the Kaweah River bypass reach downstream from the confluence with the East Fork Kaweah River is primarily comprised of pool-riffle and plane-bed segments interspersed with short bedrock segments. Boulder-sized substrate dominates in the first 2.6 miles downstream from the East Fork Kaweah River confluence, then transitions to cobble-dominated substrate downstream to the Powerhouse 2 tailrace. Although this pool-riffle and plane-bed segment is potentially more responsive to geomorphic adjustments in response to changes in the sediment supply or hydrology (Montgomery and Buffington 1997), the coarse boulder and cobble bed material sizes moderates potential morphological changes.

In order to cause a change in the channel morphology, the Proposed Project would need to alter the hydrology, specifically the magnitude and duration of the existing effective discharge range or would need to cause a change in the sediment supply

to the bypass reaches. If the hydrology associated with the effective discharge and the sediment supply is not altered by the Proposed Project, then these two key factors that control channel geomorphology would continue to shape and maintain the channel morphology in the same manner as under existing operations. As assessed in sections a. and b. above, the Proposed Project would have negligible influence on either of these two key factors, so that channel dimensions, planform, pattern, and bed material size would not be altered or impacted. The impact would be less than significant.

Mitigation Measures: None Required.

d. Would the Proposed Project cause substantial change in channel sediment storage (sedimentation, aggradation/scour/)?

Impact: Less than Significant

As discussed above in environmental issues sections a. and b., there would not be any operational changes that would alter either the sediment supply or hydrology (Q1.5 effective discharge) that controls the sediment transport capacity in the bypass reaches. Therefore, the potential for changes from Proposed Project operations to geomorphology, including aggradation/scour would not occur.

The Proposed Project includes implementation of the existing SMECP, which memorializes the erosion control and sediment activities that SCE has been historically performing.

Under the Proposed Project, forebay spills and draining of forebays during planned Project outages and sediment management would continue to be implemented. In the event of an unplanned powerhouse outage (i.e., unit trips), water in the flowlines continues to flow (drain) into the forebays until the diversion is turned out (closed). Water entering the forebays can be released via Project spillways that direct the overflow into steep, boulder and bedrock dominated natural channels that convey flow to the Kaweah River. Draining of the forebays during Project outages and sediment management, which includes opening low-level outlets to release water and flush sand and fine sediment into natural channels would continue to be implemented.

As discussed under environmental issue a. above, use of these natural channels during spills and opening low-level outlets to drain forebays has been ongoing for decades. Although some erosion still occurs based on field observations for relicensing studies, the channels are predominantly stable since most of the erosion and subsequent scour to bedrock that is exposed today, occurred historically and they have long since stabilized (SCE 2019). In addition, the total volume of sediment mobilized during spills and sediment management activities is small relative to

background sediment volume of the Kaweah River. Any sediment released into the natural drainages is dispersed along the channel as they are mobilized and transported downstream to the Kaweah River by periodic spills and maintenance releases, so that the volume of sediment reaching the river, if any, is well-moderated over time. The relative volume of water discharged compared to the river is small and the sediment transport capacity would not be affected.

Furthermore, existing conditions indicate that sedimentation has not been an issue in the Project bypass reaches. Reach weighted V^* values are low, indicating little loss of residual pool volumes. Fine sediment measured within potential spawning gravels were generally within defined criteria to support high reproductive success (SCE 2019). Therefore, continued use of natural channels for Proposed Project operation and maintenance activities implemented under the Proposed Project would have a negligible effect on sedimentation in the Kaweah River.

Under the Proposed Project, sediment management activities would continue to be implemented at Project intake facilities to prevent deposits of sediment from building up or blocking Project flowlines and intakes. Sediment management activities at the intakes include sediment removal/flushing at the Kaweah 1 intake sandbox and sediment removal at the Kaweah 2 intake which is consistent with existing conditions.

Sediment management at intake structures would occur during high flows when natural sediment transporting processes are typically occurring. Sand flushed from the Kaweah 1 Intake sandbox to the East Fork Kaweah River is mobilized at 207 cfs (see Table 3-13), which would likely be exceeded nearly every year based on the peak flood frequency curve (SCE 2019). Consequently, sandy sediments associated with flushing at the Kaweah 1 sandbox is unlikely to build up over time causing sedimentation.

At the Kaweah 2 Intake, no sediment flushing activities to the Kaweah River have occurred since issuance of the current license other than removal of a small amount of larger sediments blocking the intake structure. Removed sediment would be placed adjacent to the natural channel to allow for entrainment and routing during high flows. The relatively small amount of coarse material cleared would be re-incorporated into the background bedload volume, maintaining sediment transport and deposition processes in the bypass reaches. Therefore, continued sediment management activities that would be implemented under the Proposed Project would have a negligible effect on the potential for sedimentation associated with maintenance activity at the Kaweah 2 Intake in the Kaweah bypass reach.

As discussed above, sediment sampling and measurements for V* and bulk sample of spawning gravels under existing conditions indicate that fine sediment deposition that could cause sedimentation has not been an issue in the Project bypass reaches. Consequently, sediment flushing and removal at the intakes under the Proposed Project would have little potential for sedimentation. As the Proposed Project involves the continuation of sediment management activities occurring under existing conditions, continued sediment management is a less than significant impact.

Mitigation Measures: None Required.

3.2.10 Hazards and Hazardous Materials

Environmental Issues	Impact Determination
a. Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact
b. Would the Proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	Less than Significant Impact
c. Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than Significant Impact
d. Would the Proposed Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
e. For a Proposed Project located within 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
f. Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
g. Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Less than Significant Impact

3.2.10.1 Applicant Proposed Measures

To address potential impacts related to hazards and hazardous materials, the Applicant has proposed resource protection measures, and environmental management and monitoring plans as discussed below.

3.2.10.2 Environmental Setting

Given the Proposed Project's environmental setting the most common hazards posed are flooding, wildfire, slope failure, dam failure, or spills or exposure of hazardous materials, such as oil, gas, or pesticides (Tulare County OES 2018).

3.2.10.3 Discussion

The discussion below considered the most common hazards occurring in the Proposed Project area or resulting from ongoing Project maintenance and operation. Additionally, maintenance and operation, including the implementation of various monitoring and maintenance plans, was analyzed for consistency with local, State, and federal hazards and hazardous materials regulations and emergency response plans.

a. Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact: Less than Significant

Proposed Project operation and maintenance activities would involve the continuation of routine transport, use, or disposal of hazardous materials and substances, such as fuels and lubricants for vehicles and equipment. The proposed recreation enhancements at the Kaweah 2 Powerhouse (addition of a trash receptacle and Porta-Potty) would be implemented during SCE's routine maintenance activities, and therefore would not increase transportation, use, or disposal of hazardous materials. If required, construction of new fencing and water trough would be conducted in accordance with standard BLM BMPs to minimize any potential hazards.

Routine maintenance of facilities and vehicles, and adherence with standard best management practices (BMPs) would minimize the risk of exposure to hazardous materials during operation and maintenance of the Proposed Project. Additionally, the implementation of monitoring and management plans would minimize exposure of hazardous materials to the environment.

The VIPMP may use herbicides and rodenticides; however, this plan specifies various control measures to minimize potential impacts. Specific VIPMP control measures include a limit of less than five mph winds during herbicide application, requirement to obtain a BLM or Tulare County PUP as applicable, and requirement to maintain a 50 foot buffer zone between herbicide application and any water or drainage feature. Use of rodenticides would be limited to the interior of or within the perimeter fencing of powerhouses, switchyards, and at the Kaweah 1 Powerhouse

Campus facilities. The VIPMP also requires rodenticide applications to be implemented by a licensed PCA. (refer to Chapter 2, Project Description).

SCE may be required by FERC to comply with BLM's preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, construction of new fencing and water trough would be conducted in accordance with standard BLM BMPs to minimize any potential hazards.

With the application of standard BMPs and the implementation of monitoring, control, and management plans, the Proposed Project would have a less than significant impact to the public and environment from routine transport, use, or disposal of hazardous materials.

Mitigation Measures: None Required.

- b. Would the Proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

Impact: Less than Significant

Ongoing maintenance and operation of the Project requires gas powered vehicles and equipment. With vehicle use there is always a risk of unforeseen circumstances and accidents resulting from a release of hazardous materials such as gas, diesel, or oil. This potential accidental release would be minimized through implementation of standard BMPs for management of stormwater and containment of hazardous materials. Additionally, the WQMP includes BMPs to ensure water quality is not negatively affected from any accidental release (refer to Chapter 2, Project Description). If required, construction of new fencing and water trough would be conducted in accordance with standard BLM BMPs to minimize any potential hazards.

With the implementation of BMPs and the WQMP, risks involving the release of hazardous materials into the environmental under reasonably foreseeable upset and/or accident conditions would be less than significant.

Mitigation Measures: None Required.

c. Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact: Less than Significant

There is an existing school within one-quarter mile of the Proposed Project area. Three Rivers Kids Preschool is approximately 500 feet from transmission lines and approximately one-quarter mile from the Kaweah 2 Powerhouse. This transmission line is existing and there are no proposed changes. The Proposed Project includes minor modifications to the existing maintenance plan of the Kaweah 2 Powerhouse to protect special-status bats, but none of the proposed measures would result in additional emissions of hazardous materials, substances, or waste, with the exception of the VIPMP.

The VIPMP may use herbicides and rodenticides; however, this plan specifies various control measures to minimize potential impacts. Specific VIPMP control measures include a limit of less than five mph winds during herbicide application, and requirement to maintain a 50 foot buffer zone between herbicide application and any water or drainage feature. Use of rodenticides would be limited to the interior of or within the perimeter fencing of powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities. The VIPMP also requires rodenticide applications to be implemented by a licensed PCA (refer to Chapter 2, Project Description). With implementation of these measures the potential release of hazardous materials in proximity to schools would not occur.

The VIPMP is part of necessary periodic maintenance and specifies that 15 foot vegetation clearance must be maintained on either side of Project communication, power, and transmission lines. This may generate short-term emissions from the use of gas powered equipment and herbicide use. However, control measures would be implemented and are specified in the detail in the VIPMP to reduce the emissions to less than significant levels (refer to Chapter 2, Project Description).

With implementation of the VIPMP, potential hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would be less than significant.

Mitigation Measures: None Required.

- d. Would the Proposed Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

Impact: No Impact

Government Code Section 65962.5 mandates that the California Department of Toxic Substance Control (DTSC) maintain a yearly up-to-date list of hazardous waste sites and these sites are cataloged in EnviroStor. There are no wells within or near the Proposed Project boundary (CalGEM 2020). There is a record of Leaking Underground Storage Tanks (LUST) cleanup sites near the Proposed Project boundary; however, most of these sites are located in the Three Rivers Community and not part of the Proposed Project. Additionally, all have been closed (WRCB 2020).

Ash Mountain Storage Facility owned by Sequoia and Kings Canyon National Parks is a reported DTSC hazardous waste site near the Proposed Project boundary. This site was historically permitted to store waste oil, fuels and solvents used in vehicle maintenance and is now undergoing corrective action for cleanup (DTSC 2020). This site is approximately 500 feet from an existing transmission line (outside the FERC boundary) and about one-quarter mile from the Kaweah 1 Powerhouse. Therefore, the Proposed Project is not located on a hazardous materials site and would not result in a significant hazard to the public or the environment. No impact would occur.

Mitigation Measures: None Required.

- e. For a Proposed Project located within 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area?**

Impact: No Impact

The Ash Mountain Heliport is located near the Proposed Project. This is a private facility owned by the Sequoia-Kings Canyon National Park that supports two helicopters. The Heliport is about 500 feet from a transmission line and about one-quarter mile from the Kaweah 3 Powerhouse and Kaweah 2 Diversion Dam (AirNav 2020). However, as this facility is neither public nor an airport, there would be no impact related to safety hazards or excessive noise for people residing or working in the in the area.

Mitigation Measures: None Required.

f. Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact: Less than Significant

Tulare County has an adopted General Plan, Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP), Emergency Operation Plan (EOP), and Tulare Unit Strategic Fire Plan. These plans are designed for the Applicant to assess and mitigate potential hazards and risks, and develop procedures for preparation and response to emergencies (Tulare County 2012). For discussion of Wildland fire hazards refer to Section 3.2.21, Wildfire.

Specifically, the Safety Element of the General Plan includes multiple policies that require safe and adequate emergency access to road networks; protection of soils, groundwater, and surface water from hazardous containments; and monitoring of pesticide use (Tulare County 2012). The LHMP details mitigation measures to implement to reduce the risk of hazard impacts such as flooding, hazardous materials, fires, debris flows, and earthquake (Tulare County OES 2018). The EOP lays out the structure of emergency response and specific roles and coordination of agencies involved (Tulare County 2012). The Proposed Project implements multiple monitoring and control measures and management plans that would ensure the Proposed Project does not conflict with the General Plan, LHMP, and EOP relating to protection of the public and environment.

The Proposed Project RTMP would implement maintenance activities throughout the Proposed Project area. All implemented major activities, including any consultation, would be summarized in an annual Project Road Maintenance Summary Report that will be distributed to the BLM and/or Tulare County for review and comment. In the event of an emergency incident that blocks road/trail access to Project facilities and/or threatens public safety, SCE will notify the appropriate land management agency (i.e., BLM or Tulare County) and implement the actions necessary to restore access as soon as possible. Once the potential safety risk has been addressed and access is reestablished, SCE will follow-up with the appropriate land management agency and determine if additional actions are necessary.

Maintenance trips associated with the recreation enhancements and special-status bat species protection would be incorporated into the existing maintenance schedule. Though not anticipated, there is the potential for minimal additional vehicle trips per year for maintenance and for protection of special-status bat species at the Kaweah 2 Powerhouse. Also, if required, the new fencing and water trough would result in short-term construction trips. If additional trips are later determined to be necessary the increase would be minimal and not affect an emergency evacuation routes. If required, construction of new fencing and water trough would be

coordinated with BLM to minimize any potential hazards associated with construction traffic. The Proposed Project would result in less-than-significant impacts related to approved emergency response or evacuation plans.

Mitigation Measures: None Required.

g. Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact: Less than Significant

In Tulare County, fuels management in the vicinity of the Proposed Project is accomplished through vegetation management programs, including local landowner defensible space programs, public education, and implementation of Timber Harvest Plans, which reduce overcrowded timber stands. In addition, BLM's Bakersfield Field Office has an active fuels management program, supporting both prescribed fire and non-fire fuel treatments. Prescribed fire treatments are planned to break up continuous fuel beds and concentrations of dead or decadent fuels and are typically implemented in the Wildland Urban Interface (WUI). Non-fire fuel treatments are conducted in several areas, especially next to the WUI and within high visitor use areas, such as recreation areas and administrative sites. Treatments include mowing, cutting, and chipping vegetation, cutting and piling vegetation for future burning, and mechanically breaking down vegetation on-site. The Tulare Unit Strategic Fire Plan also provides a strategy for fire prevention and management actions within and around the Proposed Project boundary. Some strategies and required actions include maintaining defensible space around structures, evaluating and assessing potential wildland fire risks, and helping landowners use fire suppression techniques.

Potential wildland fires could be caused by malfunction of vehicles or equipment, as well as power, transmission, or communication lines. Standard maintenance of vehicles and equipment would decrease the risk of malfunction and potential fires. The implementation of the VIPMP, in compliance with the Tulare Unit Strategic Fire Plan, would ensure that a 15 foot buffer zone is maintained on either side of power, transmission, and communication lines (refer to Chapter 2) to limit wildfire fuels. Implementation of the VIPMP would minimize the exposure of people or structures to significant risk of loss, injury, or death involving wildland fires. The impact would be less than significant.

Mitigation Measures: None Required.

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3.2.11 Hydrology and Water Quality

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

3.2.11.1 Applicant's Proposed Measures

To address potential impacts related to hydrology and water quality, the Applicant has proposed resource protection measures, and environmental management and monitoring plans as discussed below.

3.2.11.2 Environmental Setting

The Proposed Project is located on the Kaweah River and East Fork Kaweah River near the community of Three Rivers in Tulare County on the western slope of the Sierra Nevada. The Watershed, upstream of the community of Three Rivers, is mostly forested, rural in nature, and sparsely populated. The Proposed Project is entirely contained within the Tulare Lake Hydrologic Region of California (DWR 2020a). The upper and lower watersheds of the Kaweah River are separated by the U.S. Army Corps of Engineers (USACE) Terminus Dam, which impounds the Kaweah River forming Lake Kaweah. Lake Kaweah is situated where mountainous terrain transitions into a gentle foothill and valley environment (SCE 2019).

Hydrology

The Proposed Project is located within the upper Kaweah River Basin, upstream of Lake Kaweah. The basin is comprised of five primary forks, including the Middle, Marble, East, North, and South forks of the Kaweah River. The upper watersheds originate at elevations higher than 8,400 feet above mean sea level (msl) in the southern portion of the Sierra Nevada in lands administered by the NPS. The Watershed, including the local sub-basins surrounding Lake Kaweah, encompass a 561-square mile area (SCE 2019).

Kaweah River and East Fork Kaweah River

The East Fork Kaweah River drains a 95-square mile area, flows through the U-shaped, glaciated Mineral King Valley before joining the Kaweah River 23.3 miles downstream. The East Fork Kaweah River joins the Kaweah River approximately 4 miles downstream from the confluence of the Middle and Marble forks of the Kaweah River. The North Fork Kaweah River, with a drainage area of 137.5 square miles, originates in several headwater streams along the Kings-Kaweah Divide and flows out of the Jennie Lakes Wilderness. The North Fork Kaweah River joins the Kaweah River 26.4 miles downstream from its headwaters, approximately 5.3 miles downstream from the East Fork and Kaweah River confluence. The South Fork Kaweah River originates on the Hockett Plateau west of the Great Western Divide at approximately 9,500 feet above msl. It drains an 89.4-square mile area and flows approximately 24.7 miles to the confluence with the Kaweah River, 2.7 miles downstream of the North Fork Kaweah River and Kaweah River confluence. Downstream of Lake Kaweah, the Kaweah River flows southwest into the Central Valley near the town of Visalia where it splits into various creeks in which flows are depleted for irrigation purposes (non-FERC Project related diversion) (SCE 2019).

Middle and Marble Forks Kaweah River

The Middle, Marble, and East forks of the Kaweah River originate along the Great Western Divide at elevations higher than 8,400 feet above msl. The Middle Fork Kaweah River drains a 103.1-square mile area. It originates in a glacial U-shaped valley and intersects with the Marble Fork approximately 20.3 miles downstream forming the Kaweah River. The Marble Fork Kaweah River drains approximately 52.5 square miles and terminates at the confluence with the Middle Fork Kaweah River approximately 17.4 miles downstream from the headwater at the Kaweah River. The Kaweah River downstream from the confluence of the Middle and Marble forks of the Kaweah River drains approximately 36.6 square miles. The local watershed surrounding Lake Kaweah drains approximately 46.9 square miles (SCE 2019).

Runoff

The amount of runoff derived from rainfall and snowmelt can vary greatly. The typical snowmelt period, when runoff and stream flows are high, starts in March, peaks in May or early June, and ends by July. Runoff peaks earlier in years with below average precipitation and lasts longer during wet years. Total annual inflow between water years 1994 to 2018 ranged from approximately 78,000 acre-feet (ac-ft) (2015) to more than 668,000 ac-ft (2017). The median total annual inflow was approximately 229,000 ac-ft during this period (SCE 2019).

SCE operates the FERC Project for hydroelectric generation and consumptive use. Consumptive water is delivered to local water users from the Kaweah 1 and Kaweah 2 flowlines, consistent with SCE's contractual obligations (refer to Chapter 2, Section 2.2.4.2).

Flood Hazards

The Proposed Project FERC boundaries are located adjacent to the Middle Fork Kaweah River⁴¹ and the East Fork Kaweah River.⁴² No mapped Federal Emergency Management Agency (FEMA) flood hazard areas exist on the East Fork Kaweah River. FEMA flood hazard areas are mapped on the Kaweah River with the downstream limit of detailed study (mouth) beginning upstream of Lake Kaweah⁴³ to just downstream of the confluence with the East Fork Kaweah River. Proposed Project facilities adjacent to

⁴¹ From the Kaweah 3 Flowline (downstream of the confluence with the Marble Fork Kaweah River) to the Three Rivers Substation (upstream of the confluence with the North Fork Kaweah River).

⁴² From the Kaweah 1 Diversion Dam to the confluence with the Kaweah River.

⁴³ Approximately 5,000 feet downstream of the confluence with the South Fork Kaweah River and the upstream limit of detailed study approximately 37,500 feet upstream of the downstream extents.

the Middle Fork Kaweah River begin approximately 24,240 feet above the downstream limit of detailed study, at FEMA cross-section AH, and end at the upstream limit of detailed study (upstream of the East Fork Kaweah River) (Figure 3–4). The type of flood hazard areas along the Middle Fork Kaweah River consist of: special flood hazard areas Zone AE⁴⁴ (riverine flooding) with Base Flood Elevation (BFE) and Zone AE Regulatory Floodway; and flood hazard area Zone X (0.2 percent annual chance flood hazard or areas of 1 percent annual chance flood with average depth less than 1 foot). In the Proposed Project vicinity, the Middle Fork Kaweah River flood areas are largely confined to the regulatory floodway (shown in red hatching in Figure 3–4), with floodway widths ranging from 190 feet to 508 feet (FEMA, 2012).

⁴⁴ AE is the base floodplain where base flood elevations are provided. AE Zones is the new format, replacing A1-130 Zones.



Source: FEMA's National Flood Hazard Layer (NFHL) Viewer (FEMA, 2020c)

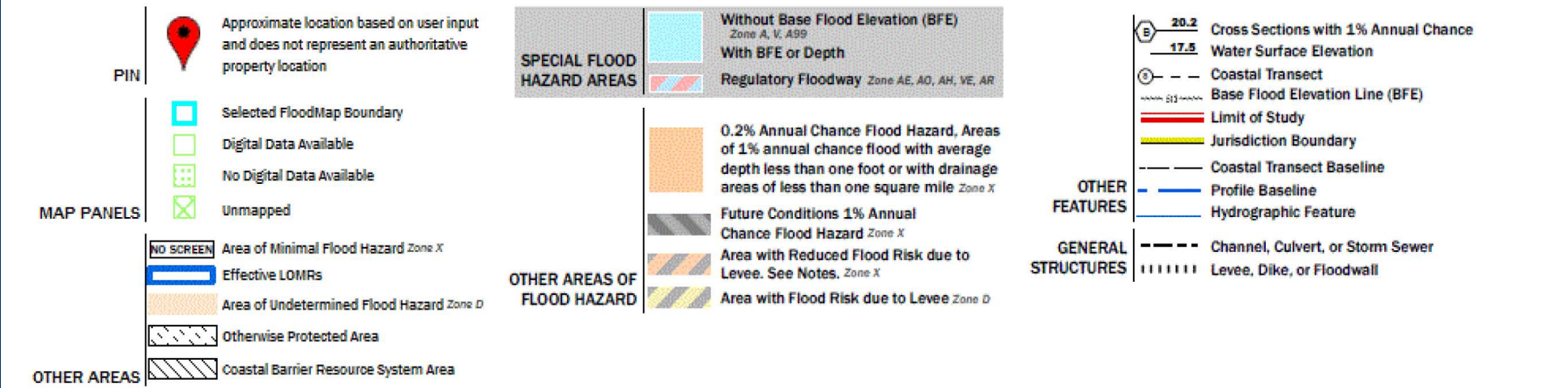


Figure 3-4. Flood Hazard Areas in Project Vicinity

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Groundwater

The Proposed Project is not located within a groundwater basin; however, it shares the same hydrologic region (Tulare Lake) as, and is located upstream of, The San Joaquin Valley – Kaweah Groundwater Basin (California Water Library 2020).

Water Quality

The Watershed is mostly forested, rural in nature, and sparsely populated. In the vicinity of Lake Kaweah, downstream of the Proposed Project, the USACE manages several recreation areas, including Slick Rock and Cobble Ridge, which provide public access to the river and floodplain areas.

Water quality samples in the Watershed upstream of the Proposed Project and on other tributaries to the Kaweah River have also generally complied with current regulatory standards, based on data collected by the USGS, DWR, CEDEN, and NPS, with a few exceptions. Samples at several locations upstream of the Proposed Project or on tributaries to the Kaweah River have not complied with regulatory standards for pH, alkalinity, and fecal coliform in the 1980s and more recently in 2014 (SCE 2019). However, measurements of pH and alkalinity in the bypass reaches and overall Watershed, although not consistent with Basin Plan objectives, are a natural characteristic of the granitic watershed and typical of most west-slope Sierra Nevada streams and rivers (SCE 2019). Applicable water quality objectives and standards in the Basin Plan (CRWQCB 2018) are provided in Table 3–15 (SCE 2019).

All general water quality sampling parameters were within the Basin Plan water quality objectives and the CTR and EPA national water quality criteria. Four of the 29 ammonia samples were greater than the Basin Plan ammonia “waste discharge” objective; however, Proposed Project operations do not produce any waste discharge.

The results of the total coliform and *E. coli* analysis are presented in Table 3–15 (SCE 2019). The *E. coli* samples were less than the EPA criteria for human health risk for contact recreation. There are no contact recreation criteria for total coliform because much of total coliform can be from natural sources, such as cattle, or residential septic systems.

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Table 3–15. Summary of Water Quality Analytical Tests, Including Laboratory Methods and Detection Limits, and Chemical Water Quality Objectives

Analyte	Units ¹	Analysis Method ²	Method Detection Limit (MDL)	Practical Quantitation Limit / Method Reporting Limit (PQL/MRL)	Water Quality Criteria Basin Plan ³	Water Quality Criteria California Toxics Rule (CTR) ⁴	Water Quality Criteria EPA Criteria ⁵	Sample Container	Hold Time	Preservative/ Comment
<i>In-Situ</i> Measurements										
Water Temperature	Celsius (°C)	Water Quality Meter	Not Applicable	Not Applicable	≤ +5°F ⁶	NS	NS	Not Applicable	Not Applicable	None
Dissolved Oxygen (DO)	mg/L	Water Quality Meter	Not Applicable	Not Applicable	5.0 to 7.0 ⁷	NS	3.0 to 8.0 ⁸	Not Applicable	Not Applicable	None
Turbidity	NTU	Water Quality Meter	Not Applicable	Not Applicable	Depends on natural turbidity ⁹	NS	NS	Not Applicable	Not Applicable	None
Conductivity	µS/cm at 25°C	Water Quality Meter	Not Applicable	Not Applicable	175	NS	NS	Not Applicable	Not Applicable	None
pH	unitless	Water Quality Meter	Not Applicable	Not Applicable	6.5 to 8.3 ¹⁰	NS	6.5 to 9.0	Not Applicable	Not Applicable	None
General Parameters										
Calcium	µg/L	EPA 200.7	10.79	50.0	NS	NS	NS	500 mL plastic	180 days	HNO ₃ , maintain at ≤6°C
Chloride	mg/L	EPA 300.0	0.08	1.0	250 ¹¹	NS	230/860 ¹²	250 mL plastic	28 days	Maintain at ≤6°C
Hardness (as CaCO ₃)	mg/L	EPA 200.7/SM 2340B	1.00	1.0	NS	NS	NS	500 mL plastic	180 days	HNO ₃ , maintain at ≤6°C
Magnesium	µg/L	EPA 200.7	3.48	25.0	NS	NS	NS	500 mL plastic	180 days	HNO ₃ , maintain at ≤6°C
Nitrate	mg/L	EPA 300.0	0.01	0.2	10	NS	NS	500 mL plastic	48 hours	H ₂ SO ₄ , maintain at ≤6°C
Nitrite	mg/L	EPA 300.0	0.01	0.1	1	NS	NS	500 mL plastic	48 hours	H ₂ SO ₄ , maintain at ≤6°C
Nitrate/Nitrite (NO ₃)	mg/L	EPA 353.2	0.028	0.10	10	NS	NS	500 mL plastic	48 hours	H ₂ SO ₄ , maintain at ≤6°C
Ammonia as N	mg/L	EPA 350.1	0.012	0.5	0.025	NS	Depends on pH and temperature	500 mL plastic	28 days	H ₂ SO ₄ , maintain at ≤6°C

Analyte	Units ¹	Analysis Method ²	Method Detection Limit (MDL)	Practical Quantitation Limit / Method Reporting Limit (PQL/MRL)	Water Quality Criteria Basin Plan ³	Water Quality Criteria California Toxics Rule (CTR) ⁴	Water Quality Criteria EPA Criteria ⁵	Sample Container	Hold Time	Preservative/ Comment
Total Kjeldahl Nitrogen (TKN)	mg/L	EPA 351.2	0.267	0.50	NS	NS	NS	500 mL plastic	28 days	H ₂ SO ₄ , maintain at ≤6°C
Total Phosphorus	µg/L	SM 4500	24.0	100	NS	NS	NS	500 mL plastic	28 days	H ₂ SO ₄ , maintain at ≤6°C
Ortho-phosphate	mg/L	SM 4500-P E	0.016	0.05	NS	NS	NS	500 mL amber glass	48 hours	Maintain at ≤6°C
Potassium	µg/L	EPA 200.7	93.9	500	NS	NS	NS	500 mL plastic	180 days	HNO ₃ , maintain at ≤6°C
Sodium	µg/L	EPA 200.7	82.9	500	NS	NS	NS	500 mL plastic	180 days	HNO ₃ , maintain at ≤6°C
Sulfate (SO ₄)	mg/L	EPA 300.0	0.09	1.0	250 ¹¹	NS	NS	250 mL plastic	180 days	Maintain at ≤6°C
Total Dissolved Solids	mg/L	SM 2540C	4.4	10	500 ¹¹	NS	NS	500 mL plastic	7 days	Maintain at ≤6°C
Total Suspended Solids	mg/L	SM 2540D	5.6	10	NS	NS	NS	500 mL plastic	7 days	Maintain at ≤6°C
Turbidity	NTU	EPA 180.1/SM 2130B	0.035	0.10	Depends on natural turbidity ⁹	NS	NS	1L amber glass	Not Applicable	Maintain at ≤6°C
Organic Carbon, Total (TOC)	mg/L	SM 5310C	Not Applicable	0.2	NS	NS	NS	250 mL amber glass	28 days	H ₂ SO ₄ , maintain at ≤6°C
Total Alkalinity	mg/L	SM 2320B	0.85	2.0	NS	NS	>20 ¹³	250 mL plastic	14 days	Maintain at ≤6°C
Metals Dissolved										
Arsenic	µg/L	EPA 1638	0.056	0.204	10	150/340 ¹²	150/340 ¹² , 0.018 ¹⁴ , 0.14 ¹⁵	125 mL plastic	48 hours	Maintain at ≤6°C
Cadmium	µg/L	EPA 1638	0.031	0.092	5	2.2/4.3 ^{12, 16}	0.72/1.8 ^{12, 16}	125 mL plastic	48 hours	Maintain at ≤6°C
Copper	µg/L	EPA 1638	0.112	0.337	1,000 ¹¹	9.0/13 ^{12, 16} , 1,300 ¹⁴	9.0/13 ^{12, 16, 17}	125 mL plastic	48 hours	Maintain at ≤6°C
Iron	µg/L	EPA 1638	1.43	4.34	300 ¹¹	NS	1,000 ¹⁸ , 300 ¹⁹	125 mL plastic	48 hours	Maintain at ≤6°C

Analyte	Units ¹	Analysis Method ²	Method Detection Limit (MDL)	Practical Quantitation Limit / Method Reporting Limit (PQL/MRL)	Water Quality Criteria Basin Plan ³	Water Quality Criteria California Toxics Rule (CTR) ⁴	Water Quality Criteria EPA Criteria ⁵	Sample Container	Hold Time	Preservative/ Comment
Lead	µg/L	EPA 1638	0.026	0.077	15	2.5/65 ^{12, 16}	2.5/65 ^{12, 16}	125 mL plastic	48 hours	Maintain at ≤6°C
Manganese	µg/L	EPA 1638	0.107	0.321	50 ¹¹	NS	50 ²⁰	125 mL plastic	48 hours	Maintain at ≤6°C
Nickel	µg/L	EPA 1638	0.117	0.352	100	52/470 ^{12, 16, 610¹⁴, 4,600¹⁵}	52/470 ^{12, 16, 610¹⁴, 4,600¹⁵}	125 mL plastic	48 hours	Maintain at ≤6°C
Chromium-Total	µg/L	EPA 1638	0.128	0.383	50	NS	NS	125 mL plastic	48 hours	Maintain at ≤6°C
Metals Total										
Mercury	ng/L	EPA 1631E	0.13	0.40	2,000	50 ¹⁴ , 51 ¹⁵	770/1,400 ¹²	125 mL plastic	48 hours	Maintain at ≤6°C
Bacteria										
Total Coliform	MPN / 100 mL	EPA SM9223B	Not Applicable	1	NS	NS	NS	100 mL plastic	24 hours	Maintain at ≤6°C
E. coli	MPN / 100 mL	EPA SM9223B	Not Applicable	1	NS	NS	126	100 mL plastic	24 hours	Maintain at ≤6°C

Notes: MDL = Method Detection Limit: The minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results.
 MPN = Most probable number of bacterial colonies per 100 mL of water.
 MRL = Method Reporting Limit: The lowest concentration of a substance that can be reliably reported under current laboratory operating conditions.
 NS = no standard available
 PQL = Practical Quantitation Limit: The concentration that can be reliably measured within specified limits and accuracy during routine laboratory operating conditions.

- Units follow listed criterion standards. If standards were not available, laboratory supplied units were used. (Note: µg/L=ppb and mg/L=ppm)
- Analysis methods are periodically updated by the EPA. The most recent methods available were used for the water quality analysis.
- The Water Quality Control Plan for the Tulare Lake Basin Second Edition relies on California primary and secondary Maximum Concentration Level objectives as criteria for water quality to be used as a municipal and domestic supply for human consumption.
- California Toxics Rule (CTR) criteria are based primarily on EPA standards developed under the Clean Water Act for human consumption of water and aquatic organisms with an adult risk for carcinogens estimated to be one in one million as contained in the Integrated Risk Information System (IRIS) as of October 1, 1996.
- Federal water quality criteria are from the EPA's website unless otherwise noted in the footnotes.
 Aquatic Life Criteria: <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table#table>
 Human Health Criteria: <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table>
- Elevated temperature wastes shall not cause the temperature of waters designated COLD or WARM to increase by more than 5°F above natural receiving water temperature.

7. 5.0 mg/L for waters designated WARM, 7.0 mg/L for waters designated COLD or SPWN.
8. The 1-day minimum warmwater criteria are 5.0 mg/L for early life stages, which includes all embryonic and larval stages and all juveniles forms to 30 days following hatching, and 3.0 mg/L for other life stages. The 1-day minimum cold-water criteria are 8.0 mg/L to achieve required intergravel DO concentrations for early life stages, 5.0 mg/L for early life stages exposed directly to the water column, and 4.0 mg/L for other life stages (EPA's 1986 'Gold Book').
9. Where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent. Where natural turbidity is equal to or between 50 and 100 NTUs, increases shall not exceed 10 NTUs. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.
10. pH shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.
11. The criteria listed are secondary Maximum Concentration Levels for California drinking water quality objectives that do not necessarily indicate a toxic amount of contaminate. Rather these standards dictate water quality objectives designed to preserve taste, odor, or appearance of drinking water.
12. Freshwater aquatic life protection, continuous concentration (4-day average)/maximum concentration (1-hour average).
13. The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25 percent of the natural level.
14. Human health criterion (30-day average) for drinking water sources (consumption of water and aquatic organisms).
15. Human health criterion (30-day average) for other waters (consumption of aquatic organisms only).
16. Criterion is hardness dependent which is expressed as a function of hardness and decreases as hardness decreases. The actual criteria are calculated based on the hardness (as CaCO₃) of the sample water. Values displayed above correspond to a total hardness of 100mg/L.
17. Criteria values are from the EPA's 2004 National Recommended Water Quality Criteria.
18. Criterion for freshwater aquatic life protection (EPA's 1986 'Gold Book').
19. Criterion for domestic water supplies (EPA's 1986 'Gold Book').

3.2.11.3 Regulatory Setting

Federal Clean Water Act

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Through cooperative federalism, responsibility for setting standards and issuing and enforcing permits is shared by the EPA, United States Army Corps of Engineers (USACE), states, and authorized tribes.

Under the CWA, NPDES permits are required for discharges of pollutants to navigable waters of the United States. These include any discharge to surface waters, such as lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under section 402 of the CWA. (33 U.S.C. Section 1342.)

Section 303

The State of California adopts water quality standards to protect beneficial uses of state waters, as required by section 303 of the CWA (33 U.S.C. Section 1313.) Section 303(d) of the CWA requires states and authorized tribes to list impaired water bodies (i.e., water bodies that do not meet water quality standards) and establish corresponding Total Maximum Daily Loads for these impaired water bodies. However, there are no Section 303(d) listed water bodies in the vicinity of the Proposed Project.

Section 401

As discussed in Chapter 1, Introduction Section 1.5, Section 401 of the CWA (33 U.S.C. Section 1341) requires applicants for a federal license or permit that may result in a discharge into navigable waters to provide the federal licensing or permitting agency a certification from the applicable state agency that the activity to be licensed or permitted will comply with federal and state water quality standards. A federal agency may not issue a license or permit without a certification or waiver from the state or authorized tribe where the discharge originates.

In California, the State Water Board is the state agency with regulatory authority to issue or deny water quality certifications for hydroelectric projects licensed by FERC. The conditions of a certification issued by the State Water Board become mandatory conditions in the FERC license for the Proposed Project.

Section 404

Section 404 of the CWA (33 U.S.C. Section 1344) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for

development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and mining projects. Section 404 requires that a permit be issued before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from section 404 regulation (e.g., certain farming and forestry activities).

State of California

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act, Water Code, Section 13000 et seq.). The Porter-Cologne Act grants the State Water Board and each of the nine Regional Water Quality Control Boards (RWQCB) authority to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. This act grants the State Water Board and the RWQCBs authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

The State Water Board and the RWQCBs jointly administer federal and state laws related to water quality in coordination with the EPA and USACE (State Water Board, 2019).

Water Quality Control Plan for the Tulare Lake Basin

Under section 303 of the CWA and under the Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board adopted, and the State Water Board and United States Environmental Protection Agency (USEPA) approved, the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) (CVRWQB 2018). The Basin Plan designates the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. The Basin Plan covers the Proposed Project area and identifies eighteen surface water beneficial uses. Of those, the following ten are applicable to the Kaweah River above Lake Kaweah:

- Municipal and Domestic Supply (MUN) – Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.
- Hydropower Generation (POW) – Uses of water for hydropower generation.
- Water Contact Recreation (REC-1) – Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably

possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

- Non-Contact Water Recreation (REC-2) – Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- Warm Freshwater Habitat (WARM) – Uses of water that support warm water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. WARM includes support for reproduction and early development of warm water fish.
- Cold Freshwater Habitat (COLD) – Uses of water that support cold-water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Wildlife Habitat (WILD) – Uses of water that support terrestrial or wetland ecosystems, including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- Rare, Threatened, or Endangered Species (RARE) – Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
- Spawning, Reproduction, and/or Early Development (SPWN) – Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. SPWN shall be limited to cold-water fisheries.
- Freshwater Replenishment (FRSH) – Uses of water for natural or artificial maintenance of surface water quantity or quality.

These beneficial uses also apply to the tributaries of the Kaweah River, which include the Marble Fork Kaweah River, the Middle Fork Kaweah River, and the East Fork Kaweah River.

The Basin Plan provides water quality objectives that are derived from various sources. These objectives include references to maximum contaminant levels that are provided in Title 22 of the California Code of Regulations which sets standards for waters designated for domestic or municipal use. The water quality objectives include both

numeric and narrative standards for surface water that are based on criteria that protect both human health and aquatic life. If water quality is maintained at levels consistent with these objectives, beneficial uses are considered to be protected. Additional, and often more stringent, criteria are provided by the CTR (65 FR 31682) and by various EPA sources (EPA 1986, 2012, 2013, 2016, 2019) to protect aquatic life, and human health. Applicable water quality objectives and standards in the Basin Plan are provided in Table 3–15.

The beneficial uses together with the water quality objectives, along with state and federal anti-degradation requirements, constitute California’s water quality standards under section 303 of the CWA.

Stormwater Discharges

In 1992, the State Water Board adopted a General Construction Storm Water Permit,⁴⁵ which requires landowners to file a Notice of Intent to discharge stormwater runoff to waters of the United States from land disturbances greater than 5 acres. In March 2003, the land disturbance threshold was reduced to 1 acre. The permit generally requires dischargers to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and perform inspections of stormwater pollution prevention measures (State Water Board 2010).

Groundwater Management Act (AB 3030)

The Groundwater Management Act, first enacted in 1992 as Assembly Bill 3030 (AB 3030), established specific procedures for local agencies to develop and adopt Groundwater Management Plans (GWMPs). The intent of the Groundwater Management Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and provide a methodology for developing GWMPs (DWR, 2020).

Sustainable Groundwater Management Act

On September 16, 2014, Governor Brown signed into law a package of bills (SB1168, AB1739, and SB1319) collectively called the Sustainable Groundwater Management Act (SGMA). SGMA requires local public agencies and Groundwater Sustainability Agencies (GSAs) in high– and medium–priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs. GSPs are detailed road maps for how groundwater basins will reach long-term sustainability. Low or very low priority basins

⁴⁵ National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. Water Quality Order Number 2009-0009-DWQ and NPDES Number CAS000002, as amended by Order Number 2010-0014-DWQ, Order Number 2012-0006-DWQ.

are not subject to SGMA but are encouraged to form GSAs and GSPs, update existing groundwater management plans, and coordinate with adjacent basins to develop a new groundwater management plan. According to the California DWR SGMA 2020 Statewide Map of Current SGMA Basin Prioritization, the Proposed Project area is not within any of the priority categories (DWR 2020b). Therefore, the groundwater basin in the vicinity of the Proposed Project is not subject to SGMA.

3.2.11.4 Discussion

- a. Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?**

Impact: Less Than Significant with Mitigation Incorporated

The Proposed Project could affect water quality due to operation and maintenance activities, as discussed below.

Instream Flows and Ramping Rates

Under the Proposed Project, maximum diversion of water from the Kaweah River and East Fork Kaweah River would be the same as existing conditions (diversions of up to 87 cubic feet per second [cfs] at Kaweah 2 Diversion and 24 cfs at Kaweah 1 Diversion). The proposed IFM provides higher MIFs in the bypass reaches during some select dry months and water year types. As a result of the increased MIFs, less water would be diverted and more water would remain in the Kaweah River and East Fork Kaweah River. The modified MIFs would slightly improve summer/fall low-flow season water temperatures in the Kaweah River and East Fork Kaweah River compared to existing conditions.

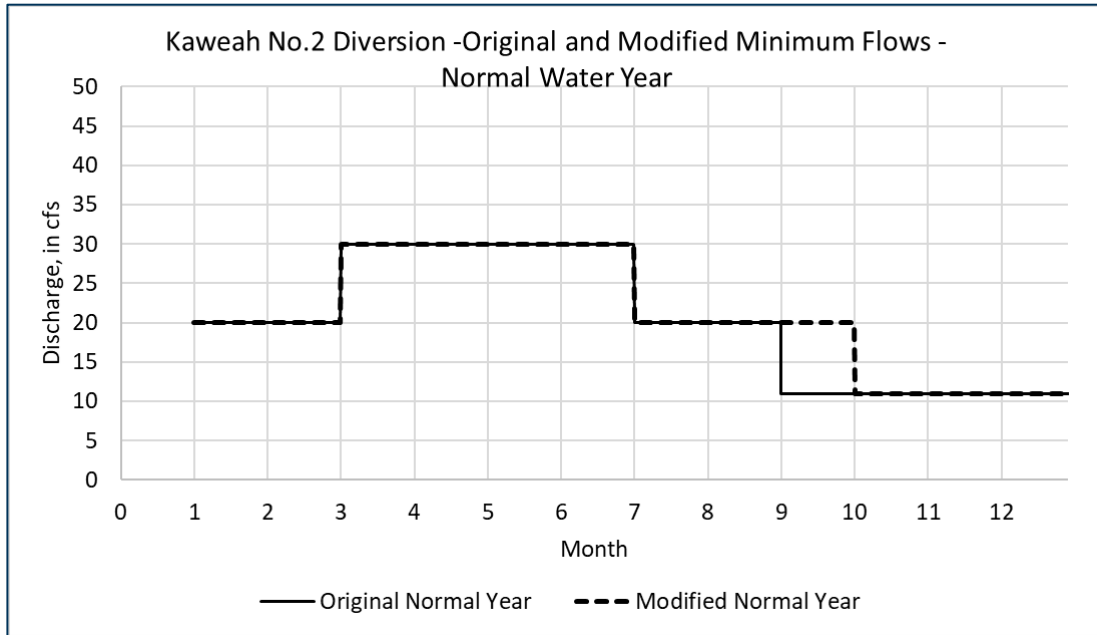


Figure 3-5a. Comparison of Kaweah 2 Diversion Existing and Proposed Modified Minimum Flows (cfs) – normal water year

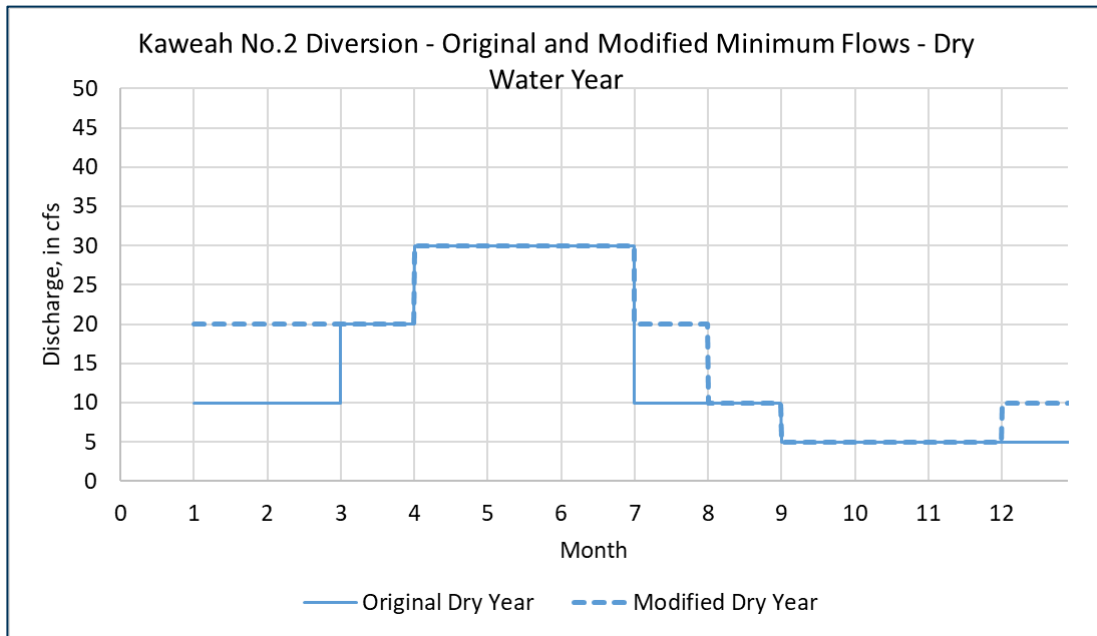


Figure 3-5b. Comparison of Kaweah 2 Diversion Existing and Proposed Modified Minimum Flows (cfs) – dry water year

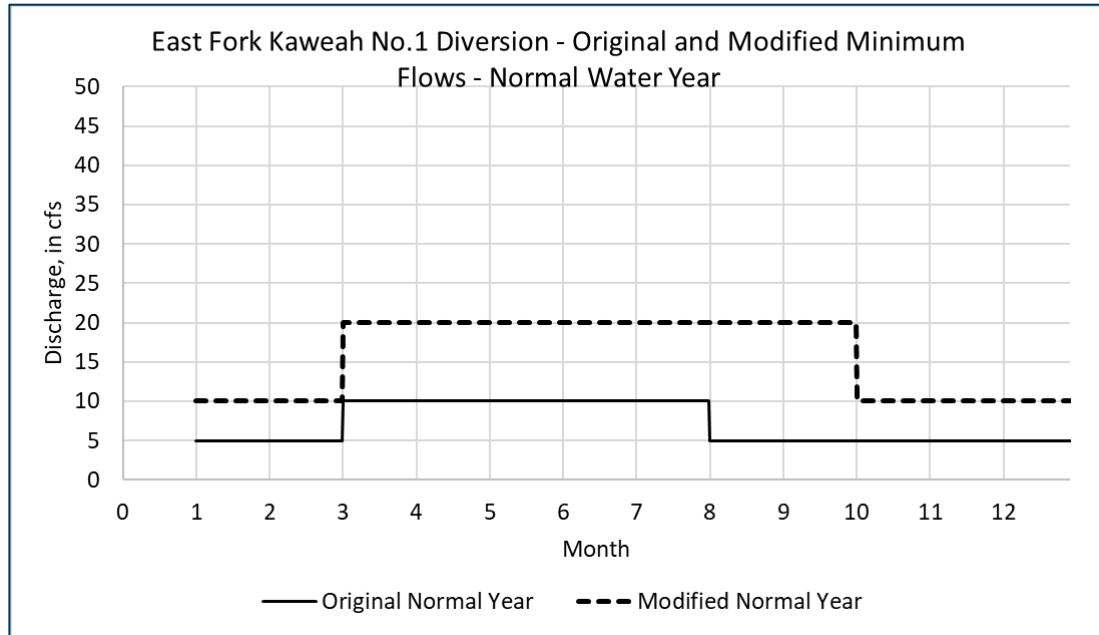


Figure 3-5c. Comparison of East Fork Kaweah 1 Diversion Existing and Proposed Modified Minimum Flows (cfs) – normal water year

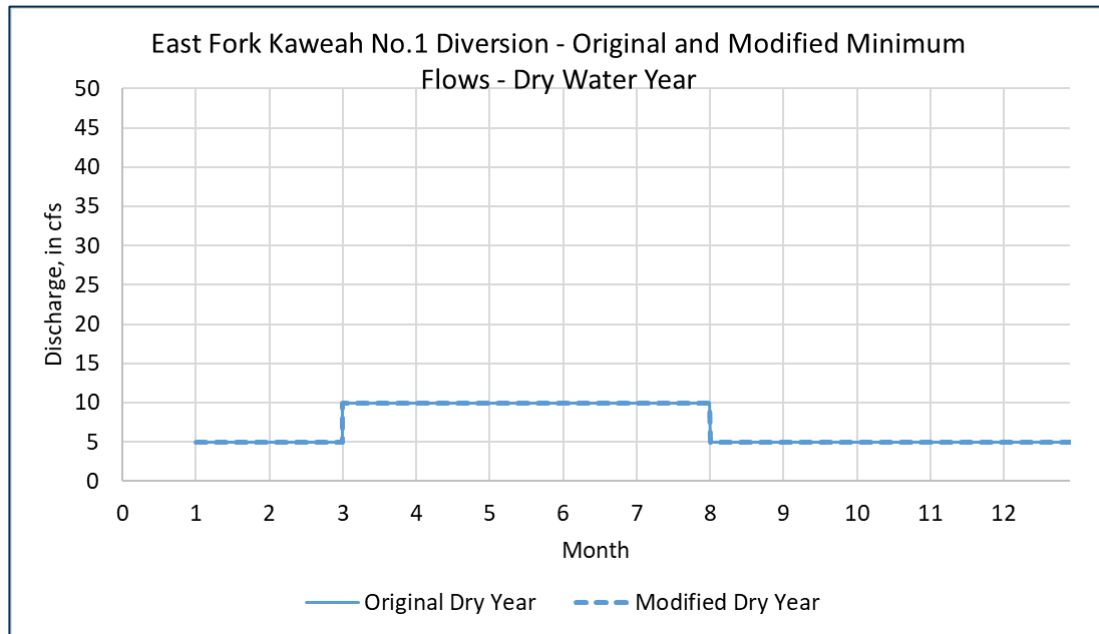


Figure 3-5d. Comparison of East Fork Kaweah 1 Diversion Existing and Proposed Modified Minimum Flows (cfs) – dry water year

Numeric water quality objectives associated with beneficial uses for the Kaweah River above Lake Kaweah are listed in Tables 3–16a and 3–16b for surface water and groundwater, respectively. Narrative objectives are summarized in Table 3–17a and 3–17b for surface water and groundwater, respectively.

Under existing conditions water quality meets all applicable water quality standards in the bypass reaches except that during the high-flow season, several water quality samples in the Kaweah River bypass reaches and comparison reaches exhibited low alkalinity (<20 mg/L) (SCE 2019). This appears to be a natural condition of the Watershed during spring high-flow conditions when snowmelt and rainfall runoff have little opportunity to pick up calcium carbonate from the basin geology. Also, there were three ammonia samples in bypass reaches during the summer low-flow sampling period that exceeded water quality criteria. Because the Proposed Project does not have operations that would typically affect ammonia, the source could potentially be septic systems from homes along the river (SCE 2019, License Application, Volume 3, Exhibit E, Section 7.3 – Water Quality). The increased MIFs may slightly improve water quality in the low-flow periods through dilution. In general, however, water quality constituents that are present in the source water upstream of the Proposed Project (e.g., pH, alkalinity, turbidity) would remain the same in the bypass reaches regardless of the increased MIF.

Table 3–16a. Summary of Numeric Basin Plan Water Quality Objectives for Surface Waters to Protect Beneficial Uses

Parameter	Water Quality Objective
Ammonia	Waters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH ₃) to exceed 0.025 mg/l (as N) in receiving waters.
Bacteria	Waters designated REC-1: the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than 10 percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
Chemical Constituents	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. For water designated for use as domestic or municipal supply (MUN), waters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22 of the California Code of Regulations. Additionally, waters shall not contain lead in excess of 0.015 mg/L.

Parameter	Water Quality Objective
Dissolved Oxygen	<p>Waste discharges shall not cause the monthly median dissolved oxygen concentrations (DO) in the main water mass (at centroid of flow) of streams and above the thermocline in lakes to fall below 85 percent of saturation concentration, and the 95 percentile concentration to fall below 75 percent of saturation concentration.</p> <p>The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:</p> <ul style="list-style-type: none"> • Waters designated WARM: 5.0 mg/L • Waters designated COLD or SPWN: 7.0 mg/L
pH	<p>The pH shall not be depressed below 6.5 nor raised above 8.3 or changed at any time more than 0.3 units from normal ambient pH.</p>
Salinity	<p>Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources. Conductivity is one of the recommended methods to determine salinity. In the Kaweah River above Lake Kaweah the maximum electrical conductivity in $\mu\text{mhos/cm}$ is 175. At Lake Kaweah, it is 175 with a maximum 10-year average of 100.</p>
Temperature	<p>Natural temperatures of waters shall not be altered unless it can be demonstrated that such alteration in temperature does not adversely affect beneficial uses. Elevated temperature wastes shall not cause the temperature of waters designated COLD or WARM to increase by more than 5°F above natural receiving water temperature.</p>
Turbidity	<p>Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:</p> <ul style="list-style-type: none"> • Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU. • Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.

Parameter	Water Quality Objective
	<ul style="list-style-type: none"> • Where natural turbidity is equal to or between 50 and 100 NTUs, increases shall not exceed 10 NTUs. • Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent. <p>In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected.</p>

Source: CVRWQCB 2018

Notes: °F = degrees Fahrenheit
mg/L = milligram per liter
ml = milliliter
NTU = nephelometric turbidity unit

Table 3–16b. Summary of Numeric Basin Plan Water Quality Objectives for Ground Waters to Protect Beneficial Uses

Parameter	Water Quality Objective
Bacteria	In ground waters designated MUN, the concentration of total coliform organisms over any 7-day period shall be less than 2.2/100 ml.
Chemical Constituents	At a minimum, waters designated MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations. At a minimum, water designated MUN shall not contain lead in excess of 0.015 mg/l.
Salinity	All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources. The maximum average annual increase in salinity measured as electrical conductivity shall not exceed 3 µmhos/cm.

Source: CVRWQCB 2018

Notes: °F = degrees Fahrenheit
mg/L = milligram per liter
ml = milliliter
NTU = nephelometric turbidity unit

Table 3-17a Summary of Narrative Basin Plan Water Quality Objectives for Surface Waters to Protect Beneficial Uses

Parameter	Water Quality Objective
Biostimulatory Substances	Water shall not contain biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
Color	Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
Floating Material	Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
Pesticides	<ul style="list-style-type: none"> • Waters shall not contain pesticides in concentrations that adversely affect beneficial uses. • There shall be no increase in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. • At a minimum, waters designated MUN shall not contain concentrations of pesticide constituents in excess of the maximum contaminant levels (MCLs) specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations. • In waters designated COLD, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, 18th Edition, or other equivalent methods approved by the Executive Officer. <p>For the purposes of this objective, the term pesticide is defined as any substance or mixture of substances used to control objectionable insects, weeds, rodents, fungi, or other forms of plant or animal life.</p>

Parameter	Water Quality Objective
Radioactivity	Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. At a minimum, waters designated MUN shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of Section 64442 and Table 64443 of Section 64443 of Title 22, California Code of Regulations.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Material	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
Suspended Material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Tastes and Odor	Waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.
Toxicity	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Table 3-17b Summary of Narrative Basin Plan Water Quality Objectives for Ground Waters to Protect Beneficial Uses

Parameter	Water Quality Objective
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. At a minimum, waters designated MUN shall not contain concentrations of pesticide constituents in excess of the maximum contaminant levels (MCLs) specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations
Radioactivity	Radionuclides shall not be present in ground waters in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life. At a minimum, ground waters designated MUN shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of Section 64442 and Table 64443 of Section 64443 of Title 22, California Code of Regulations
Tastes and Odor	Ground waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses
Toxicity	Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s)

MIF and Prioritization of Water Deliveries

The Proposed Project has two main flow proposals: (1) proposed MIF releases, as listed in Tables 2–6 and 2–7; and (2) consumptive water deliveries to local users through the flowlines based on SCE’s water delivery obligations (refer to Chapter 2, Project Description, Section 2.2.4.2). During periods where both MIF and water deliveries cannot both be met, the Proposed Project’s IFM proposes to prioritize water deliveries over MIF.

The proposed IFM would preserve water for diversion to water users, whereas historically minimum flow modification/variances were required. The IFM explicitly changes MIF requirements to stipulate that in the event that natural inflow into the

Kaweah 1 Diversion or Kaweah 2 Diversion is insufficient to meet both the MIF releases and water delivery obligations, the MIF release becomes the natural inflow minus 1 cfs and 3 cfs for Kaweah 1 and 2, respectively. Historically, during dry years/months when MIFs and contractual water deliveries are potentially in conflict, SCE would obtain a flow modification/variance from FERC to maintain the contractual water deliveries.

The Proposed Project would make it easier to maintain required deliveries. During low-runoff periods, water is diverted and delivered to local water users, but no water is diverted for generation purposes.

The Proposed Project may potentially reduce MIFs in favor of water deliveries during periods where there is insufficient water available for both uses. Of the four instances when temporary flow modifications were implemented (2002, 2012, 2015, and 2016), the 2016 event resulted in the largest decreases below MIFs. During August of a Normal Water Year, MIF requirements are 20 cfs. In August 2016 the lowest recorded MIF was 13 cfs and the duration of the flow modification was 16 days (August 16 to 31, 2016).

Though the Proposed Project includes measures and monitoring plans to reduce potential impacts to water resources, prioritization of water deliveries over MIFs is a potentially significant impact to water quality. With implementation of Mitigation Measure BIO-1 (Water Prioritization and Adaptive Management Plan), SCE will be required to develop a plan to monitor water quality before, during, and following any prioritization of water deliveries over MIFs. An objective of the Water Prioritization and Adaptive Management Plan is to ensure protection of water quality objectives as listed in the Basin Plan during prioritization of water deliveries over MIFs. At a minimum monitoring shall include: water temperature, dissolved oxygen, and turbidity. If any exceedance of water quality objectives listed in the Basin Plan occurs, SCE will implement adaptive management measures that will be identified in the Prioritization Plan to comply with water quality objectives. The adaptive management measures shall include measures ranging from increasing interim MIF to ceasing water deliveries.

Impacts of the Proposed Project to water quality from prioritizing water deliveries over MIFs is less than significant with Mitigation Measure BIO-1.

Sediment Management

As described in Chapter 2, Project Description, Section 2.3.5.1, the Proposed Project would continue existing sediment management activities at the Kaweah 1 Intake Sandbox, Kaweah 1 Forebay Tank, Kaweah 2 Intake, Kaweah 2 Forebay, and Kaweah 3 Forebay through implementation of the SMECP. As part of the

SMECP, a brief annual report would be prepared to document sediment management and erosion control activities implemented during the previous calendar year. The annual report would be filed with FERC within the first quarter of each year and distributed to the BLM, State Water Board, and CDFW. Additional information on the SMECP is discussed below:

Sediment Removal and Flushing at Kaweah 1 Intake Sandbox and Kaweah 2 Intake

Existing sediment management activities would continue to be implemented to prevent deposits of sediment from building up or blocking flowlines and intakes. Sediment management activities include sediment removal/flushing at the Kaweah 1 Intake Sandbox and sediment removal at the Kaweah 2 Intake.

As described in the SMECP, at the Kaweah 1 Intake Sandbox, the low-level outlet would be routinely opened during high flows to minimize accumulation of sand/fine sediment and transport it back into the active stream channel. If larger substrate becomes trapped in the sandbox, it would be removed and placed along the margin of the active channel during the fall maintenance outage where it can be entrained into the channel during high-flow events. At the Kaweah. 2 Intake, during high-flow events, large boulders and rocks accumulate on the intake grate obstructing flow into the intake and, at times, allowing sediment to build up near the intake. When necessary, this rock debris would be removed and placed downstream of the diversion structure to improve flow into the intake and prevent facility damage.

Sediment management at the intake structures and sand trap would generally occur during high flows when natural sediment transporting processes are typically occurring. The amount of sediment removed from the Kaweah 1 Intake Sandbox would be small compared to the natural sediment transport in the East Fork Kaweah River and the turbidity would be similar to that in the East Fork Kaweah River (the sand deposited in the sand trap and flushed would produce very limited turbidity). Removed sediment at the Kaweah 2 Intake would be placed adjacent to the natural channel to allow for recruitment during high flows. The relatively small amount of coarse material cleared would produce limited turbidity (temporally and spatially).

Kaweah 1, 2, and 3 Forebay Sediment Removal

Sediment management activities would continue to be implemented to prevent deposits of sediment from building in the Kaweah 1 and 2 forebays. Sediment management activities include routinely opening low-level outlets in the forebay to minimize any sediment build up and draining water from the forebay prior to sediment removal.

As described in the SMECP, the low-level outlet in the Kaweah 1 Forebay Tank would be routinely opened during routine operations to minimize accumulations of sand/fine sediment in the bottom of the tank and transport it into an adjacent natural channel. Any large materials remaining in the bottom of the tank would be removed during the fall maintenance outage and placed in the adjacent natural channel where it would be transported during storm events.

Several low-level outlets in the Kaweah 2 Forebay would be routinely opened during routine operations to minimize accumulation of sand/fine sediment from the bottom of the forebay and transport it into natural channels. Any large buildup of material would be removed during the fall maintenance outage and placed in the adjacent natural channel where it would be transported during storm events.

Accumulated sediment in the Kaweah 3 Forebay would be removed approximately every five years, or as needed. Prior to sediment removal, water in the forebay would be lowered, first by passing water via the penstock through the Kaweah 3 Powerhouse. As the forebay water level approaches the elevation of the intake structure, diversion through the powerhouse would be discontinued and the remainder of the water would be released through the forebay's low-level outlet. The outlet would be opened no more 15 percent of its operating range to allow water to slowly drain from the forebay and minimize entrainment of the sediment deposit near the drain. The water released from the low-level outlet enters a concrete chute that discharges into an adjacent natural channel. Sediment removal would occur once the sediment in the bottom of the forebay dries. Disposition of removed sediment would be identified in consultation with the Bureau of Land Management (BLM).

The amount of sediment/turbidity released from the forebays is anticipated to be small (i.e., routine release frequency). In addition, use of the concrete-lined chutes and natural channels during opening of low-level outlets at the forebays has occurred for decades and is part of ongoing existing operations. Initial scour to bedrock (removal of fine sediments) in these channels has long since stabilized the channels, including vegetation, and the stable channels are not likely to change in the future. Because of the stable nature of the channels, little if any sediment or turbidity is mobilized during these routine operational events. Any sediment or turbidity mobilized during these routine operation activities is small relative to background in the Kaweah River during most times of the year and is consistent with existing conditions. Furthermore, the volume of sediment or turbidity to reach the river channel is localized to a specific section of river. A smaller amount of sediment or turbidity mobilized, if any, actually enters the main river due to deposition in low gradient or slow velocity portions of the discharge channels or margin of the river channel. Also, typically the relative volume of water spilled is small compared to the river flow.

Continued operations of sediment management is a less than significant impact.

Water Temperature Monitoring Plan

The WTMP would periodically document water temperature and meteorological conditions in the bypass reaches and comparison reaches. Water temperature would be monitored at 13 monitoring sites on the bypass reaches. Additionally, two air temperature monitoring sites and one weather station monitoring site would also be monitored. A Water Temperature Monitoring Report would be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment within 90 days following the completion of each monitoring year. The report will document temperature conditions at the sampling locations and compare the data to historical data.

Water Quality Monitoring Plan

The WQMP would periodically characterize physical, chemical, and bacterial water quality conditions in the bypass reaches and comparison reaches and compare results to the current Basin Plan objectives and water quality standards, and other applicable EPA national or California Toxics Rule (CTR) standards. A Water Quality Monitoring Report will be prepared by SCE and distributed to the BLM, State Water Board, and CDFW for review and comment within 120 days following the completion of each monitoring year.

Under the Proposed Project, forebay spills and draining of flowlines and forebays would continue to be implemented as described in the SMECP and consistent with existing conditions.

Vegetation and Pest Management

Application of herbicides and pesticides, including rodenticides, has the potential to adversely affect water quality in the Kaweah River and East Fork Kaweah River if these chemicals enter the water. However, implementation of the measures in the VIPMP, such as avoiding herbicide use within 50 feet of streams or drainages; avoiding herbicide use when there is a 50 percent or greater chance of precipitation within 48 hours; avoiding herbicide use when winds are greater than 5 miles per hour; and limiting application to areas within fence perimeters and buildings would minimize potential adverse effects to water quality. Use of rodenticides would be limited to the interior of or within the perimeter fencing of powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities. The VIPMP also requires rodenticide applications to be implemented by a licensed PCA.

Road and Trail Maintenance

Road and trail maintenance activities have the potential to adversely affect water quality in the Kaweah River and East Fork Kaweah River if the activities disturb soils or if spilled chemicals associated with the work enter the water. However, implementation of the measures in the RTMP, such as adhering to the Tulare County or BLM standards; consulting Tulare County or BLM, as appropriate, to review and modify proposed best management practices (BMP) and environmental measures; and obtaining all necessary permits and approvals prior to work, would minimize potential adverse effects to water quality.

With implementation of Mitigation Measure BIO-1, potential impacts to water quality associated with prioritizing water deliveries over MIFs would be less than significant.

Mitigation Measures: Implement Mitigation Measure BIO-1

- b. Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project may impede sustainable groundwater management of the basin?**

Impact: No Impact

The Proposed Project is not located within a groundwater basin but shares the same hydrologic region (Tulare Lake) as, and is located upstream of, The San Joaquin Valley – Kaweah Groundwater Basin (California Water Library 2020).

The Proposed Project includes no activities that would extract groundwater from wells that could deplete groundwater supplies or create significant changes to groundwater recharge.

Therefore, the Proposed Project does not decrease groundwater supplies or interfere with groundwater recharge derived from the surface waters of the Kaweah River and East Fork Kaweah River.

Therefore, the Proposed Project would not affect groundwater supply or recharge, and as a result does not impede sustainable groundwater management of the basin. No impact would occur.

Mitigation Measures: None Required.

- c. Would the Proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**
- i. result in substantial on- or off-site erosion or siltation;**

Impact: Less than Significant

The Proposed Project does not include any changes to the course of any of the rivers or tributary streams within the Proposed Project area. The proposed recreation enhancements would be installed on an existing paved and level parking area, which would not result in an increase in impervious surfaces would alter existing drainage patterns (refer to the discussion under “ii” below). SCE may be required by FERC to comply with BLM’s preliminary condition to provide exclusionary fencing and a water trough for cattle grazing in existing BLM allotments, to be located near the Kaweah 2 Flowline, but outside the Proposed Project boundary (SCE 2019, Volume 3, Supporting Document A, LAND 3 – Land Use Final TSR). BLM and/or private parties have erected fencing in various locations within BLM grazing allotments that have deteriorated over time. If required, the new fencing and water trough would not alter the existing drainage pattern of the area.

Increases in instream flow that would occur under the Proposed Project (described in Chapter 2, Project Description) would be minor relative to channel forming flows under existing conditions (see Section 3.2.8, Geomorphology). As discussed above, Proposed Project sediment management actions are consistent with existing conditions and result in a less than significant impact.

Mitigation Measures: None Required

- ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**

Impact: No Impact

The Proposed Project does not include development of any new facilities. The proposed recreation enhancements requires SCE to install a portable restroom trash receptacle at the Kaweah 2 Powerhouse River Access Parking Area. Because the restroom and trash receptacle would be located on an existing impervious area, the rate or amount of surface runoff would not increase. If required, any increase in impervious surfaces would be limited to BLM’s requested water trough, and not result in a substantial increase in runoff. Therefore, the Proposed Project would have no impacts related to flooding on- or off-site.

Mitigation Measures: None Required.

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

Impact: Less Than Significant

The existing and proposed facilities within the Proposed Project area are not served by an existing public or private stormwater system. The Proposed Project does not include development of any new facilities. The proposed recreation enhancements requires SCE to install a portable restroom trash receptacle at the Kaweah 2 Powerhouse River Access Parking Area. Because the restroom and trash receptacle would be located on an existing impervious area, the rate or amount of surface runoff would not increase. Runoff related to proposed facilities would not provide an additional source of pollution. In addition, implementation of the SMECP, RTMP, and BMPs, would minimize sources of polluted runoff.

As discussed under “a” above, application of herbicides and pesticides, including rodenticides, has the potential to adversely affect water quality in the Kaweah River and East Fork Kaweah River if these chemicals enter the water. However, implementation of the measures in the VIPMP, such as avoiding herbicide use within 50 feet of streams or drainages; avoiding herbicide use when there is a 50 percent or greater chance of precipitation within 48 hours; avoiding herbicide use when winds are greater than 5 mile per hour; and limiting application to areas within fence perimeters and buildings would minimize potential adverse effects to water quality. Use of rodenticides would be limited to the interior of or within the perimeter fencing of powerhouses, switchyards, and at the Kaweah 1 Powerhouse Campus facilities. The VIPMP also requires rodenticide applications to be implemented by a licensed PCA. Therefore, the Proposed Project would have a less-than-significant impact related to existing stormwater drainage systems and additional polluted runoff.

Mitigation Measures: None Required

iv. impede or redirect flood flows?

Impact: No Impact

Proposed recreational improvements include a portable restroom and a trash receptacle within the Kaweah 2 Powerhouse River Access Parking Area (refer to the discussion under “ii” above). The parking area is located within a FEMA floodplain Zone X (FEMA 2020a), between FEMA regulatory cross-sections AN and AO (Figure 3–4), which is considered a moderate to low risk area usually the area between the limits of the 100-year and 500-year floods, with average depths less than one foot (FEMA 2020b). Development is permitted within this zone. The

adjacent river is steep and confined with deep and fast-moving water restricted to inside the floodway extents. Because the Proposed Project structures are small and located within floodplain fringe, outside of the floodway, construction of the recreational improvements would not have the potential to impede or redirect flood flows.

Mitigation Measures: None Required.

d. Would the Proposed Project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Impact: No Impact

The Proposed Project is not located in a flood hazard zone (as discussed above). The Proposed Project is located approximately 200 miles from the Pacific Ocean and is therefore, not within a tsunami zone. There are no nearby waterbodies capable of generating seiche zones or tsunamis in the event of an earthquake. Additionally, the Proposed Project is not in an area of active faults⁴⁶ or fault zones, and there are no Alquist-Priolo Earthquake Fault Zones⁴⁷ identified in the Proposed Project vicinity (CDC 2015). The nearest known active fault is the Kern Canyon Fault located approximately 32 miles east of the community of Three Rivers.

Therefore, the Proposed Project would not be affected by or increase the risk of flood hazard, tsunami, or seiche, or risk release of pollutants due to project inundation.

Mitigation Measures: None Required.

e. Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact: Less Than Significant with Mitigation Incorporated

The Proposed Project falls within the Tulare Lake Basin planning and management boundaries. Existing and potential beneficial uses that apply to the surface waters within the Watershed are identified in the Basin Plan (CRWQCB 2018). Beneficial

⁴⁶ The California Department of Conservation (CDC) defines an “Active Fault Zone” as an area of related faults that have exhibited surface displacement within the last 11,000 years.

⁴⁷ The Alquist-Priolo Earthquake Fault Zoning Act was passed into law following the 1971 San Fernando earthquake. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep.

uses identified in the Basin Plan that pertain to the Kaweah River above Lake Kaweah include: (1) municipal and domestic water supply; (2) hydropower generation; (3) water contact and non-contact water recreation; (4) warm freshwater fisheries; (5) cold freshwater fisheries; (6) wildlife habitat; (7) rare, threatened, and endangered species; (8) spawning, reproduction, and/or early development for fisheries; and (9) freshwater replenishment.

As discussed previously, water quality data indicates that the physical and water chemistry conditions in the streams and rivers associated with the Proposed Project are of high quality and conform to regulatory water quality objectives and standards. No persistent, widespread water quality issues were found during relicensing. Implementation of the WTMP, WQMP, SMECP, IVPMP and RTMP would monitor and maintain existing water quality in the Proposed Project area. Additionally, implementation of Mitigation Measure BIO-1 would ensure protection of water quality standards during periods where water deliveries are prioritized over MIFs.

There is no sustainable groundwater management plan applicable to the Proposed Project area. Therefore, the Proposed Project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

Impacts related to a conflict with, or obstruction of implementation of, a water quality control plan or sustainable groundwater management plan would be less than significant with Mitigation Measure BIO-1.

Mitigation Measures: Implement Mitigation Measure BIO-1.

3.2.12 Land Use and Planning

Environmental Issues	Impact Determination
a. Would the Proposed Project physically divide an established community?	No Impact
b. Would the Proposed Project 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?	Less than Significant Impact

3.2.12.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address land use and planning impacts.

3.2.12.2 Environmental Setting

The existing FERC boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the Bureau of Land Management (BLM) and 144.54 acres of SCE-owned or private land. Existing Project facilities include diversions; flowlines; forebays; penstocks; powerhouses and switchyards; transmission lines; power lines; communication lines; gages; access roads and trails; and ancillary and support facilities under FERC jurisdiction. Refer to Chapter 2, Project Description, for detailed descriptions of existing facilities. Section 7.9 of the FERC EIS documents provides a detailed description of the existing land use in the Proposed Project’s vicinity.

3.2.12.3 Regulatory Setting

Proposed Project land administered by BLM is subject to land use policies in the BLM Bakersfield Office RMP. The BLM land south of the Kaweah River is part of the BLM Case Mountain Extensive Recreation Management Area (ERMA). The majority of the privately owned land within the Proposed Project boundary falls under the Tulare County Urban Development Boundary within the jurisdiction of the Three Rivers Community Plan (Tulare County 2018 and Chapter 2, Project Description, of this document). The Proposed Project land is located within areas that have zoning and land use designations of rural/low density residential, recreational, and agricultural (Tulare County 2018). A small portion of the privately owned land is subject to the Tulare County General Plan (Tulare County 2012) and is designated for agricultural uses (Tulare County 2020).

3.2.12.4 Discussion

a. Would the Proposed Project physically divide an established community?

Impact: No Impact

The existing Project is located approximately 2 miles northeast of the community of Three Rivers, in a rural area that is sparsely populated (refer to Chapter 2, Project Description, of this document). The Proposed Project does not include any new facilities or new land uses that would physically divide an established community. No impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project 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?

Impact: Less than Significant

The only proposed modification that could affect land use would be the change in the FERC boundary. The existing FERC Project boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the BLM, and 144.54 acres of SCE-owned or private land. The proposed FERC Project boundary will encompass 314.82 acres, including 171.29 acres of public lands administered by the BLM and 143.53 acres of SCE-owned or private land. The net change is a decrease of 5.98 acres. Accurate survey information for the proposed new FERC Project boundary is not available at this time (SCE 2019). A tentative boundary is proposed. Figure 2–7 shows both the existing and proposed FERC boundary. SCE is currently working with landowners that are affected by the boundary modifications to obtain approval to conduct surveys and reach agreement on terms of the modifications.

The proposed changes to the FERC boundary would not result in an additional private property owner or land use authority, or changes to land use and zoning designations. The proposed boundary increases would accommodate the inclusion of existing access roads and facilities, and a solar panel and associated equipment. The proposed boundary decrease results from the removal of communication lines that are no longer needed.

Some of the roadways to be added are within the BLM ERMA. The continued use of these roads is consistent with goals and policies of BLM's ERMA and Bakersfield RMP (refer to Chapter 2, Project Description, of this document). Additionally, all roads are part of the existing infrastructure.

The existing solar panel facility is located on private land zoned for agricultural use (Tulare County 2020). The inclusion of this land within the Proposed Project boundary would have a minimal impact on the ability to support agricultural activities and would be consistent with Tulare County General Plan policies related to the preservation of agricultural resources (Tulare County 2012). Given the small scale of these proposed changes and that no new construction is proposed there is minimal conflict with existing land use policies. Therefore, impacts are less than significant.

Mitigation Measures: None Required.

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3.2.13 Mineral Resources

Environmental Issues	Impact Determination
a. Would the Proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact
b. Would the Proposed Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	No Impact

3.2.13.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address mineral resources impacts.

3.2.13.2 Environmental Setting

Mineral resources within the Proposed Project area are sparse. There are no active or historic mines within the Proposed Project area. The area is largely dominated by granitic rock with small amounts of lead found in the watershed area, but not in sizeable quantities to be profitably mined. The closest active mine is a crushed stone mine located south of Three Rivers (DOC DMR 2016).

Tungsten, silver, and galena were historically mined southeast of the Proposed Project area and the community of Three Rivers. Additionally, limestone deposits were abundant near Three Rivers and historically mined. These operations have ceased as the deposits are no longer abundant.

3.2.13.3 Discussion

- a. Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project area has no known mineral resources of potential value and is not within a mapped Mineral Resource Zone, as defined by the Surface Mining and Reclamation Act and (DOC MLC 2015). Therefore, the Proposed Project would have no impact on the availability of profitable and known mineral resources.

Mitigation Measures: None Required.

b. Would the Proposed Project 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?

Impact: No Impact

The 2012 Tulare County General Plan specifies that land with identified or potential mineral resources will be conserved for appropriate resource development. The Proposed Project area is not delineated as a Mineral Resource Zone on the Tulare County General Plan or the Three Rivers Community Plan (Tulare County 2012 and Tulare County 2018). Therefore, Proposed Project would not result in the loss of availability of a locally important mineral resource recovery site (DOC CGS 2015).

Therefore, the Proposed Project would have no impact on the availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan and no mitigation is required.

Mitigation Measures: None Required.

3.2.14 Noise

Environmental Issues	Impact Determination
a. Would the Proposed Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	No Impact
b. Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?	No Impact
c. For a Proposed 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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact

3.2.14.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address noise impacts.

3.2.14.2 Environmental Setting

Sensitive Receptors

Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

The general human response to changes in noise levels that are similar in frequency content are summarized as follows:

- A 3-decibel (dB) change in sound level is considered to be a barely noticeable difference.
- A 5-dB change in sound level typically is noticeable.
- A 10-dB increase is considered to be a doubling in loudness.

When distance is the only factor considered, sound levels from an isolated noise source will typically decrease by about 6 dB for every doubling of distance from the source.

Human perception of vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level. Groundborne vibration is almost never annoying to people who are outdoors; without the effects associated with the shaking of a building, the rumbling noise of vibration is not perceptible.

Existing Land Uses

The existing Project occupies 320-acres comprised of 176-acres of Bureau of Land Management (BLM) land and 144- acres of private land including land owned by SCE, located in Tulare County. Located within the vicinity of the Proposed Project are residences, recreation areas, and a school which can be affected by noise and vibration.

Most of the Proposed Project facilities located on the main stem of the Kaweah River are surrounded by private property. Private residences are present along the river between the Kaweah 3 and the Kaweah 2 Powerhouses.

Certain recreational areas are considered sensitive to changes in the noise environment, if used for nature walking or bird watching for example. The nearest developed public recreation facilities (e.g. campgrounds, picnic areas, boat ramps, etc.) are located at Lake Kaweah and in the SNP. Although none of the Proposed Project facilities are located within the boundaries of the SNP, operation and maintenance activities can be heard from some locations. According to the SNP, helicopter noise can be heard at two recreation sites when the nearby Ash Mountain Heliport, located next to the Kaweah 3 Powerhouse, is used as a staging area/landing site. These include the Foothill Visitor Center Picnic Area; and Indian Head River Trailhead Parking Area (see Figure 3–5). However, the Tulare County General Plan and BLM RMP did not identify any noise sensitive locations near the Proposed Project.

The Three River Kids Preschool is located approximately 0.10 mile from existing transmission lines, and approximately 0.25 mile from the existing Kaweah 2 Powerhouse.

There are no public airports within 2 miles of the Proposed Project. The nearest public airport is Woodlake Airport, located approximately 12 miles southwest. Located approximately 0.09 mile northwest of the Kaweah 3 Powerhouse is the Ash Mountain Heliport, which is privately owned by the Sequoia-Kings Canyon National Parks (AirNav 2020).

3.2.14.3 Regulatory Setting

The State of California, through its General Plan Guidelines, discuss how ambient noise should influence land use and development decisions, and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable

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uses at different noise levels expressed in community noise exposure levels (CNEL). The table below is from the Tulare County General Plan.

Land Use Category	Community Noise Exposure L_{dn} or CNEL (dB)						
	50	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	██████████		██████████			██████████	
Residential - Multi-Family	██████████			██████████		██████████	
Transient Lodging - Motels, Hotels	██████████				██████████		██████████
Schools, Libraries, Churches, Hospitals, Nursing Homes	██████████			██████████		██████████	
Auditoriums, Concert Halls, Amphitheaters	██████████		██████████			██████████	
Sports Arenas, Outdoor Spectator Sports	██████████				██████████		
Playgrounds, Neighborhood Parks	██████████				██████████		██████████
Golf Courses, Riding Stables, Water Recreation, Cemeteries	██████████				██████████		██████████
Office Buildings, Business Commercial and Professional	██████████			██████████		██████████	
Industrial, Manufacturing, Utilities, Agriculture	██████████				██████████		██████████
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.						
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.						
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.						
Clearly Unacceptable	New construction or development generally should not be undertaken.						

Source: Tulare County General Plan

A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made, and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. Local municipalities adopt these compatibility standards as part of their General Plan and modify them as appropriate for their local environmental setting (Tulare County 2018 and 2012).

3.2.14.4 Discussion

For additional discussion on the land use compatibility of the Proposed Project, see Section 3.2.12, Land Use and Planning.

- a. Would the Proposed Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

Impact: No Impact

The nearest sensitive receptors to the Proposed Project include private residences along the Kaweah River, public recreation facilities, two recreation sites located within the SNP, and the Three Rivers Kids Preschool located approximately 0.10 mile from existing transmission lines, and approximately 0.25 mile from the existing Kaweah 2 Powerhouse (see Figure 3–5).

The Proposed Project does not include any new facilities that would generate substantial temporary or permanent increases in noise or vibration levels. As part of recreation enhancements, a trash receptacle and Porta-Potty would be installed at the existing Kaweah 2 River Access Parking Area. There is potential for FERC to require construction of BLM’s requested cattle fencing and trough. However, these activities would generate negligible noise and not affect any nearby sensitive receptors.

The Proposed Project would involve small changes in the existing FERC boundary to correct errors in SCE’s License Application, Exhibit G (see Figure 2–7). However, the changes do not involve construction of new facilities or any other ground-disturbing activities that could produce noise or vibration.

Vegetation management activities implemented as part of the VIPMP may involve the use of gasoline powered equipment and tools for vegetation trimming and tree removal. These uses can generate limited and periodic noise; however, implementation of the VIPMP is already an existing use. The Proposed Project would not change the VIPMP in any way that could affect noise sensitive receptors.

The Ash Mountain Helicopter site is located within the boundaries of the SNP and is owned and operated by the NPS. Operations could potentially affect sensitive receptors; however, helicopters would not be used as part of Proposed Project operation and maintenance activities that are under FERC jurisdiction. For special projects, for example the repair of a penstock, SCE utilizes the Ash Mountain Helicopter landing site, with the permission of the NPS (SCE 2019).

The Proposed Project does not include any new facilities that would generate substantial temporary or permanent increases in noise or vibration levels. Therefore, the Proposed Project does not have potential to temporarily or permanently increase ambient noise levels, or exceed any noise standards. No impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?

Impact: No Impact

The Proposed Project does not include any new facilities that would generate substantial temporary or permanent increases in noise or vibration levels. Therefore, the Proposed Project does not have potential to result in generation of excessive groundborne vibration or groundborne noise levels. No impact would occur.

Mitigation Measures: None Required.

c. For a Proposed 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 2 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?

Impact: No Impact

There are no public airports within 2 miles of the Proposed Project area. The nearest public airport is Woodlake Airport, located approximately 12 miles southwest. The Ash Mountain Heliport, which is privately owned by Sequoia-Kings Canyon National Parks, is located approximately 0.09 mile northwest of the Kaweah 3 Powerhouse (AirNav 2020). If the Ash Mountain Heliport is not available, SCE has used the Woodlake Airport. However, routine operation and maintenance activities under the Proposed Project would not involve the use of helicopters (SCE 2019).

The Proposed Project is a continuation of existing operations and maintenance and does not include new facilities or non-routine activities. Therefore, the Proposed Project would not expose people residing or working in the area to excessive noise levels. No impact would occur.

Mitigation Measures: None Required.

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3.2.15 Population and Housing

Environmental Issues	Impact Determination
a. Would the Proposed Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b. Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

3.2.15.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address population and housing impacts.

3.2.15.2 Environmental Setting

The land encompassing the Proposed Project is rural in nature and sparsely populated, especially along the East Fork Kaweah River. With approximately 2,200 people, the largest population center in the vicinity of the Proposed Project is the community of Three Rivers, which is located approximately 2 miles southwest of the Kaweah 2 Powerhouse (U.S. Census Bureau 2010). The Community of Hammond is located near the confluence of the Kaweah River and the East Fork Kaweah River. The community of Oak Grove is located in the immediate vicinity of the Kaweah 1 Diversion and associated structures. Individual homes are scattered throughout the Kaweah River Valley, particularly in the lower foothills.

The existing FERC Project boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the BLM, and 144.54 acres of SCE-owned or private land. There are private residences and businesses located in the vicinity, and several existing Project facilities cross private parcels via easements/agreements with the landowner.

3.2.15.3 Discussion

- a. **Would the Proposed Project 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)?**

Impact: No Impact

There are no new facilities or modifications to existing facilities as part of the Proposed Project that would result in indirect or direct population growth. No new homes or businesses would be developed and there are no extensions of roads or other infrastructure that could induce population growth. No impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact: No Impact

There are no proposed new facilities or modifications to existing facilities that would result in the displacement of residences or businesses, or result in the need for replacement housing. Therefore, no impact would occur.

Mitigation Measures: None Required.

3.2.16 Public Services

Environmental Issues	Impact Determination
a. Would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: Fire protection?	No Impact
Police protection?	No Impact
Schools?	No Impact
Parks?	No Impact
Other public facilities?	No Impact

3.2.16.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address public services impacts.

3.2.16.2 Environmental Setting

The Tulare County Fire Department provides fire protection for Tulare County. The fire department operates 35 stations and eight battalions throughout Tulare County. The Proposed Project facilities lie within the Kaweah Battalion of the California Department of Forestry Fire Protection's (CAL FIRE) Tulare Unit.

Police protection services are divided into 22 areas with four stations. The Tulare County Sheriff's Department main office, located in Visalia, provides protection service for the Three Rivers Community. The office is approximately 30 miles west of Three Rivers.

In total, 44 school districts serve public education within Tulare County. Within the 44 school districts, there 33 elementary school districts, nine unified districts, one high school district, and one community college. There is one school, Three Rivers Elementary School, located in the Proposed Project vicinity.

3.2.16.3 Discussion

- c. Would the Proposed Project 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 (e.g., fire protection, police protection, schools, parks, or other public facilities):**

Impact: No Impact

The Proposed Project does not include any activity that would increase the population, which could affect public service ratios, response times, or other performance objectives. The Proposed Project is the renewal of SCE's current license for a term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. None of which would require the need for additional, or altered existing, public services above what is currently provided.

Refer to Section 3.2.21, Wildfire for additional discussion of fire protection services.

Mitigation Measures: None Required.

3.2.17 Recreation

Environmental Issues	Impact Determination
a. Would the Proposed 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 Impact
b. Would the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	No Impact

3.2.17.1 Applicant Proposed Measures

The Proposed Project does not include measures to specifically address recreation impacts, but does include Recreation Enhancement Measures, as discussed below.

3.2.17.2 Environmental Setting

The Proposed Project is located along the East Fork Kaweah River a few miles upstream from the Three Rivers community. It is located on the western side of the Sierra Nevada Mountain Range in Tulare County. Proposed Project land is either privately-owned or owned by BLM. To the north and east of the Proposed Project lies the SNP which includes Sequoia-Kings Canyon and John Krebs Wilderness area. About 5 miles southeast of the Proposed Project the Kaweah River Watershed feeds into Lake Kaweah.

Most of the Kaweah River Watershed is designated as Wilderness Area and therefore does not have developed recreation facilities in these designated areas. Lake Kaweah has recreation facilities including boat ramps, day use areas, and camping. Also, there are a few campgrounds, maintained trails and day use areas found in SNP as well as some trails in BLM’s Case Mountain ERMA.

There are a variety of recreation trails that are present in the SNP to the east and the Kaweah Lake to the west. Additionally, around the Kaweah 1 facility is BLM Case Mountain ERMA land that has a number of trails and accommodates non-motorized activities such as mountain biking, hunting, and camping.

Within the Proposed Project boundary most of the land adjacent to the East Fork Kaweah River is privately owned land and does not have public access points. There are no developed recreation facilities within the Proposed Project boundary. However, SCE does maintain a parking area near Kaweah 2 Powerhouse that is used for public parking for visitors to access a beach and the river. The parking area is paved and relatively small with only six spaces.

The Kaweah River Watershed has recreational opportunities for fishing and whitewater boating. There are minimal fishing opportunities within the Proposed Project vicinity as access is limited and privately owned. Additionally, it is reported that the best fishing spots occur along the Kaweah River upstream in SNF. Commercial whitewater boating is not allowed within the Proposed Project boundary. This portion of the river has extremely difficult rapids and is only available to private boaters. The dominant time of year for these recreational boating activities is typically in the spring when the water level is at its peak. There are a variety of popular routes that navigate the East Fork Kaweah River and pass through the Proposed Project vicinity. These routes are only traveled by non-commercial rafters and kayakers.

As mentioned above the Proposed Project area does not include any developed recreational areas; however, there are areas of the Proposed Project that support recreational activities. This includes recreation access at Kaweah Powerhouse 2 for beach and river access, and visitor access at the Kaweah 1 Forebay Road for hiking, mountain biking, or other recreational activities. While there are no developed trails visitors are seen hiking along trails along the Kaweah 2 Flowline.

3.2.17.3 Discussion

a. Would the Proposed 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?

Impact: No Impact

The current FERC license requires SCE to release MIFs below the Kaweah 1 and Kaweah 2 diversion dams according to a schedule that varies by month and water year type. Under the Proposed Project, MIF releases would generally be increased compared to existing conditions. The MIF releases are proposed to enhance habitat for aquatic species and to better simulate a more natural hydrograph. In general, enhancing habitat for aquatic species enhances recreation opportunities by improving angling success. Similarly, a hydrograph that more closely mimics natural conditions generally enhances aesthetic conditions, which improves recreation experience for all user groups, including anglers, swimmers/waders, and whitewater boaters.

The number of boating opportunity days is the same. This occurs because the potential reductions to MIF during periods water delivery prioritization over MIFs occur at flow levels that are well below the whitewater boating range. Therefore, the modified instream flows that would occur under the Proposed Project would have an overall beneficial effect to recreation resources.

Prioritization of water delivery would result in reductions of MIFs. Despite years of low projected inflow, MIFs and contractual water deliveries have been maintained in the East Fork, and maintained over 99 percent of the time in the Kaweah River. There were four instances over the 18-year flow record where contractually obligated water deliveries resulted in flows being reduced below MIFs by an average of 10 percent or less for 11 days per occurrence. This historical frequency, average reduction, and average duration suggest that these events had minimal impact on aquatic conditions (see Section 3.2.10, Hydrology and Water Quality for more information).

The modified up-ramping rates would allow for powerhouse operation flexibility. The up-ramping rates are <0.1 to 0.3 foot/hour in the current FERC license and the proposed modifications would increase the up-ramping rate to up to 1.0 foot/hour. Recreation was accounted for in this change as an up-ramping rate of less than 1.0 foot/hour is still acceptable for various recreational uses such as swimming and boating. The modified ramping rates would not impact recreational uses.

Both the Kaweah 2 Flowline and Kaweah 1 Forebay Road provide access to trails used by hikers and mountain bikes. These trails are not developed recreational trails, but SCE does permit public access. Periodic maintenance may limit recreational activities in these areas during maintenance activities; however, this maintenance is existing and no changes are proposed.

The addition of the Porta-Potty and trash receptacle would provide recreational enhancements to the Kaweah 2 Powerhouse River Access Parking Area. This area is not a developed recreation area. SCE would provide weekly maintenance and inspection to keep these facilities in good, working order. The trash receptacle would be animal resistant. The addition of both of these amenities would provide environmental benefits as well as recreational benefits.

The Proposed Project includes reporting of flow data from U.S. Geological Survey gages on the East Fork Kaweah River and the Kaweah River. SCE will post current flow data from these gages on a public, accessible, SCE maintained website. The availability of this data to the public would help inform whitewater boaters when suitable river conditions exist.

The implementation of the proposed Recreation Enhancement Measures and subsequent level of recreational use would not result in substantial or accelerated deterioration of the facility. No impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Impact: No Impact

The Proposed Project includes recreation enhancements to Kaweah 2 Powerhouse River Access Parking Area. These improvements would be a beneficial recreational impact. Although the parking and river access area is not considered a developed recreational facility, the addition of these amenities would help minimize impact of recreational uses at the area. (SCE 2019). Therefore, the Proposed Project would not include or require the expansion of recreational facilities and no mitigation is required.

Mitigation Measures: None Required.

3.2.18 Transportation

Environmental Issues	Impact Determination
a. Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	No Impact
b. Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No Impact
c. Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d. Would the Proposed Project result in inadequate emergency access?	Less than Significant Impact

3.2.18.1 *Applicant Proposed Measures*

To address potential transportation impacts, the Applicant has proposed RTMP, as discussed below.

3.2.18.2 *Environmental Setting*

Two main paved roads provide the primary access to the Proposed Project including SR 198 and Mineral King Road. Both roads are known for their scenic beauty and are frequently used by bicyclists. SR 198 is an east–west state highway Route 101 south of King City to Sequoia National Park. It connects the California Central Coast to the mid-Central Valley through Hanford and Visalia. In the Proposed Project area, SR 198 parallels the Kaweah River.

Mineral King Road runs west-east from SR 198. The road is mostly paved, but eventually becomes a trail. Bicyclists and hikers frequently use Mineral King Road. In the Proposed Project area Mineral King Road parallels the East Fork Kaweah River.

Several other public paved roads provide indirect access to Proposed Project facilities, including Dinely Road, Kaweah River Drive, Craig Ranch Road, and North Fork Drive (SCE 2019).

SCE Roads and Trails

Proposed Project access roads and trails are defined as roads and trails that are used almost exclusively by SCE for operation and/or maintenance of the Proposed Project. Project facilities are located on private property and public land managed by the BLM. However, Project roads and trails are used by private residents and recreation visitors. Several access roads are partially gated or not gated to allow local residents in the Proposed Project vicinity to access their property and/or homes. This predominantly occurs in the vicinity of the Kaweah 2 Development.

To protect public safety, SCE generally discourages public use of Project roads and trails with locked gates or signage. Although generally discouraged, SCE recognizes that incidental public recreation use of select Project roads and trails does occur. SCE maintains one informal access point to the Kaweah River – Kaweah 2 Powerhouse River Access (referred to as Edison Beach) otherwise there are no developed recreational trails.

3.2.18.3 Discussion

- a. Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?**

Impact: No Impact

The Proposed Project is the renewal of SCE's current license for a term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. The Proposed Project does not include any new facilities or new land uses that could conflict with any program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

The proposed boundary increases would accommodate the inclusion of existing access roads and facilities, and a solar panel and associated equipment. Some of the roadways to be added are within the BLM ERMA. The continued use of these roads however, is consistent with goals and policies of BLM's ERMA and Bakersfield RMP. Therefore, no impact would occur.

Mitigation Measures: None Required.

b. Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact: No Impact

CEQA analysis of transportation impacts is based on the amount and distance that a project might cause people to drive, measured by automobile trips generated and trip distance (e.g., vehicle miles traveled [VMT]). As stated in CEQA Guidelines section 15064.3, except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact. Automobile delay, as gaged by level of service or similar measures of capacity or traffic congestion, is therefore not considered a significant impact on the environment.

The Proposed Project does not include uses that would increase the number vehicle trips or driving distance in the area. Maintenance trips associated with the recreation enhancements and special-status bat species protection would be incorporated into the existing maintenance schedule. No additional vehicle trips would be necessary.

Though no additional trips are anticipated, if additional trips are later determined to be necessary it would be minimal and for maintenance of the recreation enhancements at the Kaweah 2 Powerhouse River Access Parking Area and to ensure protection of the special-status bat species during periodic maintenance at the Kaweah 2 Powerhouse, and if required, vehicle trips associated with construction of fencing and water trough.

Therefore, the Proposed Project would result in no impact related to CEQA Guidelines section 15064.3, subdivision (b).

Mitigation Measures: None Required.

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

Impact: No Impact

The Proposed Project does not include any new facilities or land uses that would substantially increase hazards due to a geometric design feature or incompatible uses. No significant safety issues were identified by SCE that are open to public use (SCE 2019). In general, sight distance along roads is good, but several "blind spots" were identified where select Project roads intersect Mineral King Road (a non-Project road) and along the Kaweah 2 Flowline East Access Road. Under the Proposed

Project, public access would continue to be limited on most of the access roads and trails by locked gates, and generally discouraged with no trespassing signs.

Since the Proposed Project does not include any new facilities or land uses that would substantially increase hazards due to a geometric design feature or incompatible uses, and would continue to limit public use of Project roads and trails, no impact would occur.

Mitigation Measures: None Required.

d. Would the Proposed Project result in inadequate emergency access?

Impact: Less Than Significant

The proposed RTMP would implement maintenance activities throughout the Proposed Project area, which could affect emergency access. In the event of an emergency incident that blocks road/trail access to Project facilities and/or threatens public safety, SCE would notify the appropriate land management agency (i.e., BLM or Tulare County) and implement the actions necessary to restore access as soon as possible. Once the potential safety risk has been addressed and access is reestablished, SCE will follow-up with the appropriate land management agency and determine if additional actions are necessary (SCE 2019). All implemented major RTMP activities, including any consultation, would be summarized in an annual Project Road Maintenance Summary Report that would be distributed to the BLM and/or Tulare County for review and comment.

The Proposed Project would not increase vehicle trips to implement the various monitoring and maintenance plans that could affect emergency access. Though no additional trips are anticipated, if additional trips are later determined to be necessary for maintenance of the recreation enhancements at the Kaweah 2 Powerhouse River Access Parking Area and to ensure protection of the special-status bat species during periodic maintenance at the Kaweah 2 Powerhouse, and if required, vehicle trips associated with construction of fencing and water trough, the increase would be minimal. In addition, with implementation of the RTMP, which includes annual consultation with BLM and/or Tulare County, potential impacts to emergency access would be minimized. The impact would be less than significant.

Mitigation Measures: None Required.

3.2.19 Tribal Cultural Resources

Environmental Issues	Impact Determination
<p>Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</p> <p>b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?</p>	<p>Less than Significant with Mitigation Incorporated</p>
<p><i>Has a California Native American Tribe requested consultation in accordance with Public Resources Code section 21080.3.1(b)?</i></p>	<p>NO</p>

3.2.19.1 Applicant Proposed Measures

To address potential impacts to tribal cultural resources, the Applicant has proposed a HPMP, as discussed below.

Historic Properties Management Plan

The HPMP, which was finalized in June 2020, serves as an update to the CRMP. Upon license issuance, the HPMP would supersede the existing CRMP and its requirements for the management of cultural resources and historic properties in the Project APE. The existing CRMP was drafted prior to the development of the FERC and ACHP *Guidelines for the Development of Historic Properties Management Plans*, issued May 20, 2002 (ACHP 2002). Because the HPMP has been developed in conformance with these guidelines, it provides a more comprehensive and robust management

framework that better aligns with current management standards and documentation protocols.

Section 4 of the HPMP details how the HPMP would be implemented to avoid, minimize, and/or mitigate adverse effects to historic properties and unevaluated cultural resources in the APE, as well as those resources identified in Table 3–8. The section includes management responsibilities and implementation protocols that would govern the treatment and protection of historic properties in the APE; thereby, formalizing and standardizing management measures into the day-to-day operation and maintenance of the hydroelectric system. Implementation of the HPMP is intended to be guided by a living approach, with the document utilized and adapted over time to cultural resource requirements as they arise within the APE. In addition, the document is intended to be collaborative in nature, with ongoing TWG⁴⁸ consultation and reporting a core component of SCE’s cultural resource management aims under the HPMP. Section 7 of the HPMP outlines the process for updating and amending the HPMP in consultation with the TWG and resolving any disputes that may arise under implementation of the document.

Monitoring Program

The monitoring program would occur at an interval of every 3 years, for sites that are either NRHP-eligible or are unevaluated and pending NRHP determinations. Monitoring would be conducted by an archaeologist qualified under the SOI PQS (36 CFR Part 61) in collaboration with the Applicant’s Cultural Resource Specialist (CRS). SCE’s CRS is the Applicant’s technical expert and is responsible for reviewing and determining potential effects, identifying treatments and management measures, and initiating the appropriate level of consultation in implementing this HPMP.

Annual Reporting

The annual report would detail exempt and screened activities reviewed under the HPMP, avoidance and management measures implemented to avoid adverse effects, any inventory results and new resources identified, any evaluations and determinations of eligibility, written description of any monitoring undertaken, and any resolution of adverse effects that may have occurred under the provisions of the HPMP during the preceding year, as well as, any other reportable historic properties management

⁴⁸ The TWG includes: BLM Bakersfield Office, SHPO, Cold Springs Tribe, Dunlap Band of Mono Indians, FERC, Kern Valley Indian Community, North Fork Mono Tribe, Northern Band of Mono Yokuts, Picayune Rancheria of Chukchansi Indians, Santa Rosa Indian Community of the Santa Rosa Rancheria, Sequoia National Park, SCE, Tachi-Yokut Tribe, Three Rivers Historical Museum, Tübatulabal of Kern Valley Tulare County Historical Society, Tule River Indian Tribe, Wukchumni Tribe, and Wuksache Indian Tribe/Eshom Valley Band.

activities. The report would include a summary of consultations that occurred with the TWG during the reporting period. The report would also include the conditions of sites and any disturbances that were observed at each site through monitoring using Site Condition Forms and any pertinent photographic documentation.

Resource Protection Measures

During the planning stage of any maintenance activity, work locations must be reviewed by the CRS so that historic properties or unevaluated cultural resources that may be affected can be identified for avoidance measures. The CRS would work with the team to adjust the design of maintenance activities where possible to avoid historic properties or unevaluated cultural resources. If avoidance is not possible other resource protection measures are proposed. Generally these include on-site monitor, restrict activities to existing transportation systems, use of protective barriers, and limiting crossings of linear features.

3.2.19.2 Environmental Setting

The existing FERC boundary encompasses 320.80 acres, including 176.26 acres of public lands administered by the Bureau of Land Management (BLM) and 144.54 acres of SCE-owned or private land. No current Tribal owned lands are within the Proposed Project boundary.

3.2.19.3 Regulatory Setting

Assembly Bill 52

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American Tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). The term “tribal cultural resource” refers to either of the following:

- (a) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - Included or determined to be eligible for inclusion in the California Register of Historical Resources;
 - Included in a local register of historical resources as defined in subdivision (k) of California PRC Section 5020.1; or
- (b) A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the PRC Section 5024.1.

By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a “project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment” (Pub. Resources Code, § 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. The consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (Pub. Resources Code, § 21080.3.1).

Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the NAHC shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the project area. If the tribe wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe’s request to consult, the lead agency must then begin the consultation process within 30 days.

If a lead agency determines that a project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (Pub. Resources Code, § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records Act. TCRs are also exempt from disclosure.

3.2.19.4 Discussion

On July 14, 2020, the State Water Board sent a letter to the Santa Rosa Rancheria Tachi Tribe to notify them of the consultation opportunity for TCRs related to the Kaweah Hydroelectric Project. On August 4, 2020, the State Water Board was informed that the letter was addressed to the incorrect tribal contact. On August 5, 2020, the State Water Board sent another letter to the Santa Rosa Rancheria Tachi Tribe to notify them of the consultation opportunity for TCRs related to the Proposed Project. State Water Board staff did not receive a response from the tribe before the 30-day deadline

to request consultation and has not received any correspondence from the Santa Rosa Rancheria Tachi Tribe since receiving the August 4, 2020, letter.

- a. Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**

Impact: Less Than Significant with Mitigation Incorporated

According to the HPMP, Native American consultation was initiated by FERC in 2017 with seven federally-recognized tribes in the Proposed Project region. In 2018, the NAHC provided a list of six individuals familiar with the Proposed Project area who could supply information, or who might recommend others with specific knowledge. The list of individuals was expanded with information from Bureau of Indian Affairs, FERC, SCE, and BLM files from the license pre-application document, based on previous projects in the study area, and the combined list formed the Native American contact list for the Proposed Project. The current Native American list contains 26 individuals representing five federally-recognized Indian tribes,⁴⁹ nine California Native American Tribes, and the California Indian Basketweavers' Association (SCE 2020).

The Ethnographic TSR (ETSR) (SCE 2019) submitted for review by SHPO reports the results of the Ethnographic study, which included a records search, Sacred Lands File (SLF) search, archival research, literature review, and tribal outreach to tribes with direct historical ties to the lands located within the APE. The records search was completed on February 23, 2018 and included the APE and a 1-mile search radius around it.

No TCPs were identified during development of the HPMP. As stated in the HPMP, because there have been no ethnographic or tribal resources determined eligible as TCPs within the APE, the HPMP does not manage any resources of this type at this time. However, tribal contacts expressed interest in the botanical resources of the Proposed Project area and the archaeological sites of Native American origin that

⁴⁹ Cold Springs Rancheria of Mono Indians of California, Northfork Rancheria of Mono Indians of California, Picayune Rancheria of Chukchansi Indians of California, Tachi-Yokut Tribe/Santa Rosa Indian Community of the Santa Rosa Rancheria, and Tule River Indian Tribe of the Tule River Association

have been identified within the APE. SCE plans to continue to include the tribal contacts interested in consulting on the remainder of their inventory and evaluation efforts for the Proposed Project. It is further stated that if any additional documentation reveals the potential for such resources, the HPMP would be amended and updated accordingly (SCE 2020).

The Proposed Project involves the continued operations of existing structures and would be generally consistent with existing operations. SCE would maintain the Proposed Project facilities in the similar manner as under the current license.

Though no TCPs were identified in the development of the HPMP, 12 prehistoric sites were located which may be eligible for the NRHP and may also be a TCR as they included bedrock milling features, rock lined hearths, ceramic scatters, lithic scatters, and midden.

TCRs may be present within the Proposed Project's boundary. TCRs may include sites, features, places, cultural landscapes, scared places, and objects with cultural value to California Native American Tribes that are either: included or determined to be eligible for inclusion in the California Register of Historical Resources, or included in a local register of historical resources (Public Resources Code, Section 21074). Additionally, it is always possible that human remains/cemeteries may be encountered during the term of the new license associated with ongoing operations and maintenance activities that involve ground-disturbing actions.

Because the Proposed Project does not routinely involve ground-disturbing activities outside of ongoing maintenance activities such as routine maintenance of the facilities, vegetation management, and road maintenance which are consistent with existing conditions, no impacts are expected for TCRs. However, as regular ongoing maintenance may potentially encounter, identify, and affect currently unidentified TCRs, implementation of Mitigation Measure TCR-1 – Implementation of the HPMP is required to reduce the potential impact to less than significant with mitigation incorporated.

Mitigation Measures: TCR-1.

During regular maintenance and operations, if a resource is encountered and may be a Tribal Cultural Resource (TCR) as defined by the Public Resources Code, Section 20174; as appropriate, avoidance and resource protection measures as listed in Section 4.5.3 of the HPMP shall be implemented.

- b. Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?**

Impact: Less than Significant with Mitigation Incorporated

The Proposed Project involves the continued operations of existing structures and would be generally consistent with existing operations. SCE would maintain the Proposed Project facilities in the similar manner as under the current license.

Though no TCPs were identified in the development of the HPMP, 12 prehistoric sites were located which may be eligible for the NRHP and may also be a TCR as they included bedrock milling features, rock lined hearths, ceramic scatters, lithic scatters, and midden.

TCRs may be present within the Proposed Project's boundary. TCRs may include sites, features, places, cultural landscapes, scared places, and objects with cultural value to California Native American Tribes (Public Resources Code 21074).

Additionally, it is always possible that human remains/cemeteries may be encountered during the term of the new license associated with ongoing operations and maintenance activities that involve ground-disturbing actions.

Because the Proposed Project does not routinely involve ground-disturbing activities outside of ongoing maintenance activities such as routine maintenance of the facilities, vegetation management, and road maintenance which are consistent with existing conditions, no impacts are expected for TCRs. However, as regular ongoing maintenance may potentially encounter, identify, and affect currently unidentified TCRs, implementation of Mitigation Measure TCR-1 – Implementation of the HPMP is required to reduce the potential impact to less than significant with mitigation incorporated.

Mitigation Measures: Implement Mitigation Measure TCR-1.

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3.2.20 Utilities and Service Systems

Environmental Issues	Impact Determination
a. Would the Proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	No Impact
b. Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c. Would the Proposed Project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	No Impact
d. Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	No Impact
e. Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact

3.2.20.1 Applicant Proposed Measures

The Proposed Project does not include any environmental measures or plans that specifically address utilities and service system impacts.

3.2.20.2 Environmental Setting

The Proposed Project is located in the northeastern portion of Tulare County near the unincorporated towns of Three Rivers, Hammond, and Oakgrove. All Proposed Project facilities, with the exception of the Kaweah 1 Diversion and portions of the Kaweah 1 Flowline, are located within the Three Rivers community.

Sanitary Sewer

Most of the sanitary sewer systems within unincorporated areas of Tulare County serve individual small communities and sometimes shared wastewater treatment facilities. Domestic water service within Tulare County is generally operated and managed by special districts such as Community Services Districts (CSDs), sanitary and sewer maintenance districts, and County Service Areas. Many of these districts, excluding County Service Areas, are not subject to county control and instead are self-governing. In Three Rivers, there is no storm drainage system or sanitary sewer service and instead the community relies on individual or community septic systems.

Solid Waste and Recycling Services

Solid waste collection in Three Rivers is provided by Mid Valley Disposal, licensed through the County of Tulare. The nearest landfill to the Proposed Project area is the Visalia Landfill, also known as the Road 80 Landfill. The Visalia Landfill capacity is estimated at 16,521,501 cubic yards. The Tulare County Solid Waste Division indicates that the Visalia Landfill has sufficient capacity to accommodate solid waste disposal demands through year 2040 (LAFCO 2013).

Electricity and Natural Gas

Natural gas service in Tulare County is primarily provided by The Gas Company. Pacific Gas & Electric serves northern Tulare County's electric needs on a limited basis. SCE provides electric service to the majority of the County.

Telecommunication

A total of five telephone companies, AT&T, Ducor, SBC, Sprint, and Verizon, provide telecommunication services in Tulare County. These companies provide long distance calling, wireless services, Internet access, and other business solutions to residential and commercial consumers.

3.2.20.3 Regulatory Setting

In accordance with Assembly Bill 939 (AB 939), known as the California Integrated Waste Management Act, Tulare County has adopted a Countywide Integrated Waste Management Plan (CIWMP). The CIWMP includes a Source Reduction and Recycling Element (SREE), Household Hazardous Waste Element (HHWE), and Non-disposal Facility Element (NDFE).

3.2.20.4 Discussion

- a. Would the Proposed Project require or result in the relocation or construction of construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?**

Impact: No Impact

The Proposed Project is the renewal of SCE's current license for a term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities. The Proposed Project does not involve the relocation or construction of new or expanded water, stormwater drainage, electric power, natural gas, wastewater treatment, telecommunication facilities.

The proposed modification of the existing FERC Project boundary would add areas containing existing flowlines, flowline access roads, gaging cableways, a diversion solar panel, and a solar yard satellite repeater. The boundary would also be decreased to remove communication line and road corridors no longer needed for operation and maintenance. The net change in overall acreage is a decrease of 5.98 acres. These changes would not affect any utilities and service systems.

The only proposed new facilities include the installation of a Porta-Potty restroom and a 64-gallon trash receptacle at the existing Kaweah 2 Powerhouse River Access Parking Area. These recreation enhancements would be inspected and maintained by SCE once weekly, or more frequently if warranted, to ensure these features are in good and clean working order. The implementation of these activities would not impact any existing utilities and service systems.

The addition of the Porta-Potty restroom would require periodic pumping and disposal; however, it would be a negligible effect at wastewater treatment facilities. The communication line corridors that would be removed by the Proposed Project would have no impact on telecommunication facilities, as the lines are no longer operating, or have already been removed or replaced by newer technology. No impact would occur related to relocation or construction of new or expanded services.

Mitigation Measures: None Required.

- b. Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

Impact: No Impact

The Proposed Project does not require additional water supplies and therefore, would not affect water supplies available to serve the Proposed Project and serve any reasonably foreseeable future development during normal, dry, and multiple dry years. Therefore, the Proposed Project would have no impact on water supplies.

Mitigation Measures: None Required.

- c. Would the Proposed Project 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?**

Impact: No Impact

The Proposed Project would not alter wastewater treatment systems. The addition of the Porta-Potty restroom would require periodic pumping and disposal; however, it would have a negligible impact on the capacity of existing wastewater treatment facilities. Therefore, the wastewater treatment provider would have adequate capacity to serve the Proposed Project's projected demand. The Proposed Project would have no impact on the wastewater treatment provider.

Mitigation Measures: None Required.

- d. Would the Proposed Project 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?**

Impact: No Impact

The addition of the 64-gallon trash receptacle would require periodic disposal; however, it would have negligible impacts on solid waste generation. Mid Valley Disposal operates solid waste disposal in Three Rivers that serves the Proposed Project. The nearest landfill to the Proposed Project is the Visalia Landfill, which has a capacity of 16,521,501 cubic yards. The Tulare County Solid Waste Division projects that the Visalia Landfill has sufficient capacity to accommodate solid waste disposal demands through year 2040. Therefore, the addition of the Proposed Project's trash would be negligible related to the capacity of the Visalia landfill.

The Proposed Project would comply with the Tulare County Countywide Integrated Waste Management Plan (CIWMP) and the corresponding SREE in order to comply with the California Integrated Waste Management Act. Therefore, all state and local standards pertaining to solid waste reduction goals would be met. There would be no impact.

Mitigation Measures: None Required.

e. Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact: No Impact

As indicated, The Proposed Project would comply with the CIWMP and the corresponding SREE in order to comply with the California Integrated Waste Management Act. Therefore, all state and local standards pertaining to solid waste reduction goals would be met. No impact would occur.

Mitigation Measures: None Required.

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3.2.21 Wildfire

Environmental Issues	Impact Determination
a. Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
b. Would the Proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than Significant Impact
c. Would the Proposed Project require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than Significant Impact
d. Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than Significant Impact
<i>Is the Proposed Project located in or near state responsibility areas or lands classified as high fire hazard severity zones?</i>	YES

3.2.21.1 Applicant Proposed Measures

To address potential wildfire impacts, the Applicant has proposed the TPCLMM and VIPMP that would lessen wildfire risk, as discussed below

3.2.21.2 Environmental Setting

The Proposed Project area is located within a “Very High” fire hazard severity zone in a State Responsibility Area, as defined by the California Department of Forestry and Fire Protection (CAL FIRE) (CDF 2007). The Proposed Project facilities lie within the Kaweah Battalion of CAL FIRE’s Tulare Unit. According to the Tulare Unit Strategic Fire Plan (CDF 2018a), the Tulare Unit has a low frequency of large damaging fires and the Kaweah Battalion averages approximately 8 to 15 fire starts annually (CDF 2018a). Lightning tends to be a common fire cause in the higher elevations (CDF 2018a). Although rare, starts in the upper elevations pose a significant potential for large wildland fires due to the abundance of fuels and rugged terrain (CDF 2018a). The

largest fires in the immediate vicinity of the Proposed Project since 1970 were the Case Fire, which occurred in 1987 and consumed about 4,500 acres and the Kaweah Fire, which occurred in 1996 and consumed about 4,650 acres.

In Tulare County, fuels management in the vicinity of the Proposed Project is accomplished through vegetation management programs, including local landowner defensible space programs, public education, and implementation of Timber Harvest Plans, which reduce overcrowded timber stands. In addition, BLM's Bakersfield Field Office has an active fuels management program, supporting both prescribed fire and non-fire fuel treatments. Prescribed fire treatments are planned to break up continuous fuel beds and concentrations of dead or decadent fuels and are typically implemented in the WUI. Non-fire fuel treatments are conducted in several areas, especially next to the WUI and within high visitor use areas, such as recreation areas and administrative sites. Treatments include mowing, cutting, and chipping vegetation, cutting and piling vegetation for future burning, and mechanically breaking down vegetation on-site.

3.2.21.3 Discussion

a. Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact: Less Than Significant

The Proposed Project is the renewal of SCE's current license for a term of 50 years, and includes the continuation of existing operation and maintenance activities and proposed license changes, including modification to existing project operations, new and modified environmental measures, management and monitoring plans, modification to the existing FERC project boundary, facility enhancements, and additional maintenance activities.

The proposed RTMP, would implement maintenance activities throughout the Proposed Project area, which could affect emergency access. In the event of an emergency incident that blocks road/trail access to Project facilities and/or threatens public safety, SCE would notify the appropriate land management agency (i.e., BLM or Tulare County) and implement the actions necessary to restore access as soon as possible. Once the potential safety risk has been addressed and access is reestablished, SCE will follow-up with the appropriate land management agency and determine if additional actions are necessary (SCE 2019). All implemented major RTMP activities, including any consultation, would be summarized in an annual Project Road Maintenance Summary Report that would be distributed to the BLM and/or Tulare County for review and comment.

The Proposed Project would not increase vehicle trips to implement the various monitoring and maintenance plans that could affect emergency access. Though not

anticipated, there is the potential for minimal additional vehicle trips per year for maintenance and for protection of special-status bat species at the Kaweah 2 Powerhouse. Also if required, the new fencing and water trough would result in short-term construction trips. If additional trips are later determined to be necessary the increase would be minor and not affect emergency evacuation routes. In addition, with implementation of the RTMP, which includes annual consultation with BLM and/or Tulare County, potential impacts to emergency access would be minimized. Therefore, impacts related to impairing an adopted emergency response plan or emergency evacuation plan would be less than significant.

Mitigation Measures: None Required.

- b. Would the Proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

Impact: Less Than Significant

A project would be considered to have a significant impact if, due to existing natural factors, it increased the severity of existing fire risk in a manner that could expose project occupants to wildfires or place project occupants in areas where wildfire smoke is known to concentrate. A project that would increase the severity of existing fire risk due to natural factors could include, for example, a housing development project placed on a slope with prevailing uphill winds in a fire-prone area. Such placement could increase the amount of fuels that could feed a wildfire, which would exacerbate the existing risk of wind-driven wildfires and expose the occupants of the project to that very risk.

Vegetation management activities implemented as part of the VIPMP may involve the use of herbicides, pesticides, rodenticides, and the use of gasoline powered equipment and tools (refer to Chapter 2, Project Description, of this document) for vegetation trimming and tree removal. Potential wildland fires could be caused by malfunction of vehicles or equipment as well as power, transmission, or communication lines. Standard maintenance of vehicles and equipment would decrease the risk of malfunction and potential fires. The implementation of the VIPMP, in compliance with the Tulare Unit Strategic Fire Plan, would ensure that a 15-foot buffer zone is maintained on either side of power, transmission, and communication lines (refer to Chapter 2) to limit wildfire fuels. The TPCLMM also includes vegetation clearance activities implemented around power and communication lines to reduce fire risk.

Implementation of the VIPMP and TPCLMM would minimize exposure to pollutant concentrations from wildfire. The impact would be less than significant.

Mitigation Measures: None Required.

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

Impact: Less Than Significant

A project would be considered to have a significant impact if it included the construction of structures or facilities (whether temporary or permanent), the construction or operation of which could result in the temporary or ongoing exacerbation of fire risks or increase the rate or extent of the spread of wildfires.

The Proposed Project does not include installation of new infrastructure that could exacerbate fire risk. However, to reduce fire hazards associated with ongoing operation and maintenance of Proposed Project facilities, SCE would implement regular maintenance activities. The TPCLMM specifies vegetation clearance activities implemented around power and communication lines to reduce fire risk. The VIPMP would also be implemented to reduce fire hazards.

Implementation of the VIPMP and TPCLMM would minimize the fire risks. The impact would be less than significant.

Mitigation Measures: None Required.

- d. Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

Impact: Less Than Significant

A project would be considered significant if it created substantial new risks of post-fire downslope or downstream flooding or landslides or if it resulted in the placement people or structures in areas of existing risk of post-fire downslope or downstream flooding or landslides.

The Proposed Project would not result in the creation of new flooding or landslide risks. The recreation enhancements would be installed on an existing paved and level parking area. Since no new development would occur, the Proposed Project would not place people or structures in areas at existing risk of post-fire downslope or downstream flooding or landslides. Discussion of potential impacts related to

hydrology, including alteration to drainage, runoff, and flooding patterns, is found in Section 3.2.10, Hydrology and Water Quality.

The Proposed Project includes the continuation of existing operation and maintenance activities, compliance with environmental measures and plans, and proposed license changes. To reduce fire hazards associated with ongoing operation and maintenance of Proposed Project facilities, SCE would implement regular maintenance activities. The TPCLMM specifies vegetation clearance activities implemented around power and communication lines to reduce fire risk. The VIPMP would also be implemented to reduce fire hazards. Implementation of the VIPMP and TPCLMM would minimize fire risks.

Therefore, the Proposed Project would not have a significant impact regarding the exposure of people or structures to risk of post-fire downslope or downstream flooding or landslides. The impact would be less than significant.

Mitigation Measures: None Required.

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3.2.22 Mandatory Findings of Significance

Environmental Issues	Impact Determination
a. Does the Proposed Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	Less than Significant with Mitigation Incorporated
b. Does the Proposed Project have impacts that are individually limited, but cumulatively considerable? ⁵⁰	Less than Significant Impact
c. Does the Proposed Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	Less than Significant Impact

3.2.22.1 Discussion

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

Impact: Less Than Significant with Mitigation Incorporated

Impacts to biological aquatic and terrestrial resources, such as fish, birds, amphibians, reptiles, BMI communities, special-status mammals and their habitat, special-status plants, wetlands and riparian habitat from Proposed Project activities that produce noise, human activity and disturbance, ground disturbance, and vegetation removal could potentially occur. As provided in SCE’s License Application, Volume 3, Exhibit E (SCE 2019), the Proposed Project includes implementation of: FPMP, ESM, WTMP, and WQMP. Implementation of the

⁵⁰ “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.

Proposed Project's changes to ramping rates and MIF releases would generally be a benefit to special-status species in the Project bypass reaches since it would better simulate a more natural hydrograph. Additionally, modifications to the following existing environmental measures and plans are proposed: IFMs, Stream Gaging Monitoring Plan, and the VIPMP, which would minimize biological resources impacts. SCE would continue to implement existing environmental measures and plans including the revised SMECP, Special-Status Bat Protection Measure, AMMP, WMMP, and the TPCLMM.

During regular operations, modified ramping rates and increased MIF may enhance riparian vegetation communities and would benefit environmental resources; however, during Proposed Project operations that prioritize water deliveries over MIFs, there is a potential significant impact to environmental resources. Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of riparian habitat and associated environmental resources, as well as water quality during periods of water prioritization. This will reduce any potential significant impact. Therefore, the Proposed Project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.

Mitigation Measures: Implement Mitigation Measure BIO-1.

b. Does the Proposed Project have impacts that are individually limited, but cumulatively considerable?⁵¹

Impact: Less Than Significant

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (Cal. Code Regs., tit. 14, § 15355).

A project's cumulative impact is, generally, the change in the environment which results from the incremental impact of the project when added to other closely

⁵¹ "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.

related past, present, and reasonably foreseeable future projects (Cal. Code Regs., tit. 14, § 15355).

Geographic Scope

The geographic scope for the cumulative impact analysis defines the physical limits or boundaries of the effects on environmental resources from implementation of the Proposed Project when considering effects from other projects and actions. The geographic scope appropriate for evaluating cumulative effects for the Proposed Project is generally the Kaweah River Basin including the:

- Kaweah River from Terminus Dam upstream to the confluence with the Middle Fork Kaweah River and Marble Fork Kaweah River;
- Middle Fork Kaweah River from the confluence with the Kaweah River upstream to the Middle Fork Diversion Dam;
- Marble Fork Kaweah River from the confluence with the Kaweah River upstream to the Marble Fork Diversion Dam; and
- East Fork Kaweah River from the confluence with the Kaweah River upstream to the confluence with tributaries receiving water from the Mineral King Lakes.

Projects and actions considered in this cumulative effects analysis include the following (SCE 2019, Volume 3, Exhibit E, Section 9):

SCE's Non-FERC Facilities

Operation and management of non-FERC or Commission) facilities by SCE located in the SNP that are not subject to a FERC License. This includes the upper portion of the Kaweah 1 and the Kaweah 3 developments, that are operated under a SUP (Permit PWR-SEKI-6000-2016-015) issued to SCE by the NPS. The following briefly describes SCE's non-FERC facilities.

- Upper portion of the Kaweah 1 Development – The upper portion of the Kaweah 1 Development includes four small reservoirs—Eagle Lake, Lady Franklin Lake, Crystal Lake, and Upper Monarch Lake (collectively referred to as the Mineral King Lakes)—that release water during the late summer and fall months to augment flows in the East Fork Kaweah River and generating capacity of the Kaweah 1 Powerhouse.
- Upper portion of the Kaweah 3 Development – The upper portion of the Kaweah 3 Development, includes the Middle Fork and Marble Fork diversion dams, and water conveyance system (Kaweah 3 Flowline) that divert water

from the Middle Fork and Marble Fork river reaches to the Kaweah 3 Powerhouse.

Operations and Management of SNP

The SNP is managed by the NPS to protect the greater Sierran ecosystem, including the sequoia groves and high Sierra regions of the parks, and its natural evolution, and to provide appropriate opportunities for present and future generations to experience and understand park resources and value. SNP borders the Proposed Project to the north and east.

Bureau of Land Management

Management of federal land by Bureau of Land Management (BLM) includes federal lands located both within the FERC Proposed Project boundary and immediately adjacent to the Proposed Project to protect resources consistent with the Bakersfield Field Office RMP.

Operations and Maintenance of the Terminus Dam and Lake Kaweah

The U.S. Army Corps of Engineers (USACE) operates and maintains Terminus Dam and Lake Kaweah. The Dam is located on the Kaweah River approximately 10 miles downstream of the Project. Terminus Dam was constructed in 1962 for flood control and irrigation purposes. During the spring runoff season, the reservoir stores up to 185,000 ac-ft of water. Downstream of Terminus Dam, the Kaweah River flows are diverted for irrigation of adjacent farmlands. The Terminus Power Plant (FERC Project Number 3947), completed in 1992 by the Kaweah River Power Authority, generates hydroelectricity at the dam. The power plant is jointly managed by Tulare Irrigation District and the Kaweah Delta Water Conservation District. The power plant has a capacity of 20.09 megawatts.

Other Projects

Upon review of the Tulare County Resources Management Agency website, there is one reasonably foreseeable future project located within the Kaweah River Basin, the Hampton Inn and Suites Three Rivers Project. The project is located approximately 4 miles from the Proposed Project near the Kaweah River, and includes a 3-story hotel and associated improvements along State Route 198. Improvements include 108 parking stalls, a septic tanks, and on-site storm drainage. The project is consistent with the Tulare County General Plan, the Three Rivers

Community Plan, and with the current Zoning classification.⁵² The project is currently under CEQA review.

Analysis

As discussed throughout Section 3.2, the Proposed Project would result in no impact related to: aesthetics, agriculture, mineral resources, noise and vibration, population and housing, recreation, and utilities and services systems. Additionally, the Proposed Project would result in a less than significant impact to air quality, energy, geologic hazards, GHG emissions, hazards or hazardous materials, hydrology or water quality, land use and planning, or transportation/traffic hazards, or wildfire. The Proposed Project would not result in individually or cumulatively considerable impacts related to these resource areas. Key areas of concern are discussed below.

Biological Resources

Impacts to biological aquatic and terrestrial resources from the Proposed Project could potentially occur. SCE will implement a FPMP, ESM, WTMP, and WQMP. Implementation of the Proposed Project's changes to ramping rates and MIF releases would be an overall benefit to special-status species in the Project bypass reaches since it would better simulate a more natural hydrograph. However, during Proposed Project operations that prioritize water deliveries over MIFs, there is a potential significant impact to environmental resources. Although these water prioritizations have been limited, historical occurrences may not fully represent future water conditions and those conditions may result in longer periods of reduced flow in the Kaweah and East Fork Kaweah River. Implementation of Mitigation Measure BIO-1 would ensure protection of riparian habitat and associated environmental resources, as well as water quality during periods of water prioritization. This will reduce any potential significant impact.

Additionally, modifications to the following existing environmental measures and plans are proposed; IFMs, Stream Gaging Monitoring Plan, and the VIPMP, which would minimize biological resources impacts. SCE would continue to implement existing environmental measures and plans including the SMECP, Special-Status Bat Protection Measure, AMMP, WMMP, and the TPCLMM.

⁵² As stated in the Initial Study for Draft Environmental Impact Report, Hampton Inn (CEQ 20-004), County of Tulare Resource Management Agency, dated October 2020.

Other existing projects in the area of the Proposed Project include: 1) SCE non-FERC facilities located upstream of the Proposed Project within the SNP on the Marble Fork and Middle Fork Kaweah rivers; 2) SCE's non-FERC Mineral King Lakes located upstream of the Proposed Project on the East Fork Kaweah River; and 3) USACE's Terminus Dam/Lake Kaweah located downstream of the Proposed Project. These projects and associated operations are part of existing conditions and are not expected to cumulatively impact biological resources when considered with the Proposed Project.

Future projects include renewal of the SUPs for SCE upstream facilities which may result in impacts to biological resources. Changes to operations of SCE's non-FERC facilities is speculative and would be subject to additional environmental review.

On a project-level analysis, the Proposed Project's impacts on biological resources would be reduced to less than significant with implementation of proposed plans, measures, and Mitigation Measure BIO-1. When considered with the existing and potential future projects, the Proposed Project's incremental effects on biological resources are not cumulatively considerable and its contribution to cumulative impacts would be less than significant with mitigation incorporated.

Hydrology and Water Quality

Impacts associated with water quality and hydrology could occur from operation and maintenance activities. Potential impacts include violation of water quality standards and conflict with a water quality control plan. To ensure the Proposed Project would not violate water quality standards or degrade surface or groundwater quality, SCE will implement a WTMP, WQMP, SMECP, VIPMP, and RTMP, as well as Mitigation Measure BIO-1. The WTMP would periodically document water temperature and meteorological conditions in the bypass reaches⁵³ and comparison reaches. The WQMP would periodically characterize physical, chemical, and bacterial water quality conditions in the bypass reaches and comparison reaches and compare results to the current Basin Plan objectives and water quality standards, and other applicable EPA national or California Toxics Rule (CTR) standards. The SMECP includes methods to minimize erosion and sediment/turbidity entrainment in the natural channels. Implementation of RTMP measures, such as adhering to the Tulare County or BLM standards; consulting Tulare County or BLM, as appropriate, to review and modify proposed BMP and environmental measures; and obtaining all

⁵³ A bypass reach is a segment of a river downstream of a diversion facility where Project operations result in the diversion of a portion of the water from that reach. Typically, the diverted water re-enters the river through a powerhouse at the downstream end of the bypass reach.

necessary permits and approvals prior to work, would prevent adverse effects to water quality.

Hydrology

SCE's non-FERC facilities located within the SNP on the Marble Fork and Middle Fork Kaweah rivers include run-of-the-river water diversions, which bypass 0.58 mile of the Marble Fork, 0.87 mile of the Middle Fork Kaweah River, and 3.57 miles of the Kaweah River. Diverted water re-enters the Kaweah River at the Kaweah 3 Powerhouse. Up to 80 cfs may be diverted into flowlines and re-enter the river. Natural seasonal patterns of high and low flow are not expected to be significantly altered.

SCE's non-FERC Mineral King Lakes storage in the SNP affect flows in the East Fork Kaweah River a small amount. The lakes store up to 1,152 ac-ft in the spring and that water is released into the East Fork Kaweah River in late summer/fall. These flows may be diverted at the Kaweah 1 Diversion and re-enter the Kaweah River at the Kaweah 1 Powerhouse. The amount of flow change in the East Fork Kaweah River due to storage in the Mineral King Lakes is relatively minor.

USACE's Terminus Dam/Lake Kaweah is located approximately 10 miles downstream of the Kaweah Project. During the spring runoff season, the reservoir stores up to 185,000 ac-ft of water. Water is released from the dam by the USACE for flood control and to meet irrigation needs. Downstream of Terminus Dam, the Kaweah River flows are diverted for irrigation of adjacent farmlands. Water releases serve multiple local water districts, including the Tulare Irrigation District and the Kaweah Delta Water Conservation District, and urban areas, including the cities of Tulare and Visalia.

Overall, there would be no cumulative effect on hydrology in the Kaweah Lake Basin. Flow into Kaweah Lake is not affected and water supply in Kaweah Lake and flood control are unaffected by the Proposed Project. The Proposed Project in combination with other projects and actions in the Kaweah River Basin would not cumulatively affect hydrology in the Kaweah River and East Fork Kaweah River.

Water Quality

Continued operations of the Proposed Project is generally consistent with existing conditions. The IFM provides higher MIFs in the bypass reaches during select dry months and water year types. As a result of the increased MIFs, less water is diverted, and more water remains in the Kaweah River and East Fork Kaweah River. The modified MIFs slightly improve summer/fall low-flow season water temperatures in the bypass reaches compared to existing conditions. The increased MIFs may also slightly improve water quality in the low-flow periods through dilution. The

Proposed Project also includes implementation of water temperature (WTMP) and water quality (WQMP) monitoring plans.

The Proposed Project, which includes the IFM, WTMP, WQMP, SMECP, IVPMP and RTMP would monitor and maintain existing water quality in the Proposed Project area.

SCE's non-FERC facilities located within the SNP on the Marble Fork and Middle Fork Kaweah rivers include run-of-the-river water diversions, similar to the Kaweah Project. The diversion and re-entry of water back into the Kaweah River at Kaweah 3 Powerhouse does not affect dissolved oxygen in the rivers (dissolved oxygen would be naturally saturated from the open flowlines and rivers). It is anticipated, that similar to the Proposed Project, the diversions and bypass reaches would have a small effect on water temperature (very slight increase in the warm months when diversions are occurring). During the driest months and water year types diversions would cease and water temperature would be unaffected.

SCE's non-FERC Mineral King Lakes storage in the SNP affect flows in the East Fork Kaweah River in late summer/fall. The increased flows in late summer/fall could potentially have a beneficial effect (cooling) on East Fork Kaweah River water temperature upstream of the Kaweah 1 Diversion and downstream of the Kaweah 1 Powerhouse in the Kaweah River. Water in the bypass reaches and other river reaches would maintain high dissolved oxygen levels.

USACE's Terminus Dam/Lake Kaweah impounds water, and typical of storage reservoirs, it is anticipated that the reservoir creates a warm epilimnion and cooler hypolimnion during the summer/early fall season that creates warm water conditions suitable for warm water fishes and a cooler water conditions suitable for cool water fishes (assuming oxygen is not depleted). Dissolved oxygen and water temperature inflows to Lake Kaweah would not be altered from existing conditions; therefore, the oxygen and temperature stratification dynamics that are currently occurring in the reservoir would remain unchanged.

The Proposed Project's impacts on hydrology and water quality would be reduced to less than significant with implementation of proposed plans, measures, and Mitigation Measure BIO-1. These measures would further mitigate the Proposed Project's contribution to any cumulative impacts on these resources.

Therefore, the Proposed Project's incremental effects on hydrology and water quality are not cumulatively considerable and its contribution to cumulative impacts would be less than significant with mitigation incorporated.

Conclusion

No past, present, or reasonably foreseeable future projects in the Proposed Project area were identified that, when taken together with the Proposed Project, would result in significantly cumulative impacts to any environmental resource. Given that the Proposed Project impacts would be minimized by implementing proposed plans, measures, and Mitigation Measures BIO-1 and TCR-1, the potential for a significant cumulative impact resulting from the Proposed Project in combination with other planned or reasonably foreseeable projects would be less than significant.

Mitigation Measures: Implement BIO-1 and TCR-1.

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

Impact: Less Than Significant

As discussed previously, the Proposed Project would not expose persons to adverse impacts related to visual quality, agriculture, air quality, energy, geologic hazards, GHG emissions, hazards or hazardous materials, hydrology or water quality, land use and planning, noise, population and housing, transportation/traffic hazards, recreation, affect utilities and services, or wildfire. These impacts were determined to have no impact or a less than significant impact due to implementation of the environmental management and monitoring plans that are part of the Proposed Project. The Proposed Project would not have significant environmental impacts that would cause substantial adverse effects on humans either directly or indirectly. Therefore, the Proposed Project's individual contribution to effects on human beings is not cumulatively considerable.

Mitigation Measures: None Required.

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