

APPENDIX E.1 PROPOSED ENVIRONMENTAL MEASURES, MANAGEMENT, AND MONITORING PLANS

Appendix E.1 contains draft proposed environmental measures, management, and monitoring plans developed for the relicensing of Southern California Edison's (SCE) Kern River No. 1 Hydroelectric Project (Project). Section 7, *Environmental Analysis*, in Exhibit E of the Application for New License includes an analysis of potential effects of continued operation and maintenance of the Project under the Proposed Action Alternative. To address ongoing or new environmental or cultural Project effects, SCE included environmental measures, management, and monitoring plans as part of the Proposed Action that are designed to protect, maintain, or enhance environmental and cultural resources over the term of the new license. The proposed environmental measures, management, and monitoring plans are listed below and provided in this appendix.

- Minimum Instream Flow Measure
- Stream Gaging Plan
- Sediment Management Plan
- Fish Population Monitoring Plan
- Project Access Roads and Trails Management Plan
- Vegetation Management Plan
- Wildlife Resources Management Plan
- Visual Resources Protection Plan

1.0 DRAFT MINIMUM INSTREAM FLOW MEASURE

Southern California Edison (SCE) prepared this Minimum Instream Flow Measure for the Kern River No. 1 Hydroelectric Project (Project). The Minimum Instream Flow Measure will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project. The Minimum Instream Flow Measure describes minimum flow requirements for the Project and procedures in the event of a deviation.

1.1 MINIMUM INSTREAM FLOW REQUIREMENTS

SCE will release and maintain the following minimum instream flows (MIF) in the Kern River downstream of Democrat Dam (i.e., in the bypass reach between Democrat Dam and the Kern River No. 1 Powerhouse):

- **June 1 through September 30 of each year:** 50 cubic feet per second (cfs) or inflow to Democrat Dam, whichever is less.
- **October 1 through May 31 of each year:** 15 cfs or inflow to Democrat Dam, whichever is less.

1.2 MINIMUM INSTREAM FLOW COMPLIANCE

MIFs will be measured at the existing United States Geological Survey Gage No. 11192500 (SCE Gage No. 409) (see the Stream Gaging Plan). The MIF release will be based on daily average flow measurements using gage data measured in 15-minute time increments:

- The daily average flow must meet or exceed the thresholds specified in the minimum instream flow schedule.

1.3 DEVIATION PROCEDURES

The MIFs may be temporarily modified because of unplanned and planned deviations. The procedures for each are described below:

- **Unplanned Deviations:** MIFs may be temporarily modified, if necessary, in the event of operating emergencies, hazardous conditions, public safety emergencies, or equipment failures beyond the control of SCE. For any unplanned deviation from the MIF requirements, SCE will notify the FERC, United States Forest Service (Forest Service), State Water Resources Control Board (State Water Board), and California Department of Fish and Wildlife (CDFW) within 10 business days following the deviation and file a report with FERC as soon as possible but no later than 30 days after each such incident. The report will include the following information: (1) a description of the cause of the deviation; (2) the duration and magnitude of the deviation; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and SCE's response; (5) any comments or correspondence received from the resource agencies, or confirmation that none were received; (6) documentation of any observed or reported environmental

effects; and (7) a description of corrective actions or measures implemented to prevent similar deviations in the future.

- **Planned Deviations:** MIFs may be temporarily modified for periods of up to three weeks (typically for planned maintenance activities), following mutual agreement among SCE, Forest Service, State Water Board, and CDFW. After concurrence is received from these agencies, SCE will notify FERC within 10 days and file a report with FERC no later than 30 days after the end of the planned deviation. Each report will include: (1) a description of the reasons for the deviation and how Project operations were modified; (2) the duration and magnitude of the deviation; (3) any observed or reported environmental effects; and (4) documentation of consultation with the resource agencies. For planned deviations exceeding three weeks, SCE will submit a request to FERC for a temporary variance from the operational requirements in the Project license and obtain approval prior to implementation.

DRAFT STREAM GAGING PLAN

SOUTHERN CALIFORNIA EDISON Kern River No. 1 Hydroelectric Project (FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
3.0 Project Location.....	1
4.0 Flow Monitoring Gages.....	1
5.0 Dissemination of Real-time Flow Information	2
6.0 Maintenance and Calibration of Gages	2
7.0 Reporting	2
8.0 Plan Updates	3

LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
Project	Kern River No. 1 Hydroelectric Project
QA/QC	quality assurance/quality control
SCE	Southern California Edison
SGP	Stream Gaging Plan
State Water Board	State Water Resources Control Board
USGS	United States Geological Survey

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Stream Gaging Plan (SGP) for the Kern River No. 1 Hydroelectric Project (Project). The SGP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

The SGP identifies the Project-related stream gages and describes activities associated with ongoing operation and gaging compliance requirements that will be carried out during the new license term.

2.0 PURPOSE AND OBJECTIVES

The purpose and objectives of this SGP are to:

- Identify and describe Project stream gages used to document compliance with minimum instream flows.
- Describe dissemination of real-time flow information to the public.
- Describe operations and maintenance of stream gages.
- Summarize annual reporting requirements.

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California. The Project occupies federal lands within the Sequoia National Forest, administered by the United States Forest Service (Forest Service).

4.0 FLOW MONITORING GAGES

The Project operates as a run-of-the-river project and has no water storage. The Project includes the following gaging stations that monitor and record water flow to document compliance with minimum instream flows:

- United States Geological Survey [USGS] Gage No. 11192500; SCE Gage No. 409 (Kern River near Democrat Springs) – This gage is located about 0.4 mile downstream of the Democrat diversion dam. The streamflow is measured using a float and recorder. Data collected from this gage represents flow in the Kern River, below the diversion dam.
- USGS Gage No. 11192000; SCE Gage No. 410 (Kern River No. 1 Conduit near Democrat Springs) – This gage is located on the Kern River No. 1 Flowline near Cow Flat Creek. Streamflow is measured using a float and recorder. Data collected from this gage represents flow diverted for the Project.

The USGS also identifies USGS Gage No. 11192501 (Kern River near Democrat Springs) in its records. Data for this gage is computed by combining the data collected in the bypass reach below Democrat Dam (USGS Gage No. 11192500) and the flowline (USGS Gage No. 11192000). For record keeping purposes, the USGS has numbered this gage (No. 11192501) and compiles data as if it were an actual gage.

Data records for the gages are provided to USGS by SCE under the general supervision of the USGS in connection with FERC Project No. 1930.

5.0 DISSEMINATION OF REAL-TIME FLOW INFORMATION

Streamflow data at USGS Gage No. 11192500 (SCE Gage No. 409) Kern River below Democrat Dam, as well as an estimate of the inflow upstream of Democrat Dam (combined flow from SCE gages 409 and 410) will be provided for public viewing via the internet and may be posted directly by SCE or through a third party (e.g., www.dreamflows.com). Streamflow information will be at a minimum hourly average flow. The data will not have been checked for accuracy and will be labeled with the following, or similar, language:

These provisional stream flow data have not been reviewed for accuracy and may be subject to significant change. The data are estimates of stream flow based on field instrumentation. Actual stream flows may vary significantly from the estimates provided. Users should use the information with caution and do so at their own risk. The SCE accepts no liability for the accuracy, availability, suitability, reliability, usability, completeness or timeliness of the data or graphical depictions of the data provided via this website.

6.0 MAINTENANCE AND CALIBRATION OF GAGES

SCE will conduct gage maintenance practices for each of the Project gages in accordance with USGS gaging and data collection protocols and standards, including routine inspection, calibration, and quality assurance checks of the equipment. Maintenance will include the collection of field discharge measurements to verify the rating tables are accurate. The USGS typically conducts biannual inspections with SCE to verify the calibration of the rating curves for each of the gaging stations for which it is responsible for reviewing and publishing flow records.

Routine trimming of vegetation below the cableway, near staff gages, and around stream gaging equipment typically will occur annually. Maintenance for the stream gaging equipment will include inspecting and removing blockages, minor repairs, or replacement of components.

7.0 REPORTING

SCE will measure and document all instream flow releases in readily accessible formats. Flow data collected by SCE from the stream gages will be reviewed by SCE hydrographers as part of its quality assurance and quality control (QA/QC) protocol. Upon completion of the QA/QC process, the data will be made available to USGS in annual

hydrology summary reports. SCE understands that the USGS will then complete their QA/QC review of the data and request adjustment and subsequently publish the data and post it within their electronic database that can be accessed via the Internet.

8.0 PLAN UPDATES

SCE can update and revise the SGP in consultation with the Forest Service, State Water Resources Control Board (State Water Board), California Department of Fish and Wildlife (CDFW), and interested stakeholders, if needed. Sixty days will be allowed for written comments and recommendations. After consultation with the Forest Service, State Water Board, and CDFW, SCE will file the updated SGP with FERC, including all relevant documentation of consultation and coordination. If SCE does not adopt a particular recommendation by interested stakeholders, the filing will include the reasons for not doing so. SCE will implement the updated SGP upon FERC approval.

DRAFT
SEDIMENT MANAGEMENT PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
3.0 Project Location.....	1
4.0 Project Facilities	1
5.0 Sediment Management Procedures	2
5.1 Sandbox Operations	2
5.2 Democrat Dam Operations	2
5.2.1 Background Information.....	2
5.2.2 Sediment Management Procedures	3
5.2.3 Emergency Related Sediment Removal	4
6.0 Monitoring.....	4
7.0 Regulatory Compliance	5
8.0 Reporting.....	5

LIST OF TABLES

Table SMP-1. Democrat Dam Impoundment Sediment Management Strategies	7
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LIST OF MAPS

Map SMP-1a. Project Location and Facilities	9
Map SMP-1b. Project Location and Facilities	10
Map SMP-2. Bypass Reach Sediment Monitoring Locations	11

LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
Project	Kern River No. 1 Hydroelectric Project
SCE	Southern California Edison
SMP	Sediment Management Plan
State Water Board	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Sediment Management Plan (SMP) for the Kern River No. 1 Hydroelectric Project (Project). The SMP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

The SMP outlines procedures that will be used at Democrat Dam to maintain Project infrastructure, support downstream ecological functions, and ensure compliance with applicable regulatory permits and water quality standards required under the FERC license.

2.0 PURPOSE AND OBJECTIVES

The purpose of this SMP is to maintain and protect system reliability and environmental resources at Democrat Dam and associated facilities. The SMP is designed to emulate, to the extent practicable, the natural sediment regime of the lower Kern River facilitating the downstream movement of naturally occurring sediment and supporting downstream ecological functions.

The objectives of the SMP include:

- Outline sediment management procedures for both Sandbox and Democrat Dam operations.
- Define monitoring protocols and ensure alignment with regulatory compliance requirements.
- Specify sediment management reporting standards and documentation procedures.

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California (Map SMP-1a and SMP-1b). The Project occupies federal lands within the Sequoia National Forest, administered by the United States Forest Service (Forest Service).

4.0 PROJECT FACILITIES

The Project is a run-of-the-river facility that diverts up to 412 cubic feet per second (cfs) from the Kern River for power generation using infrastructure, including Democrat Dam (crest length 204 feet, height 29 feet, impoundment surface area 27 acres), a sand trap (sandbox), a flowline system of flumes and tunnels, penstock, and a powerhouse. A detailed description of the Project facilities can be found in SCE's Application for New License (Exhibit E, Section 5.0, *Proposed Action and Alternatives*).

The hydrology of the lower Kern River is primarily regulated by the operation of Lake Isabella, which is managed by the United States Army Corps of Engineers (USACE) in coordination with the Kern River Watermaster. Outside of flood control releases, peak flows typically occur in mid-summer, driven by agricultural water demands. In some years, however, natural peak flows may also occur during precipitation runoff events at other times of the year.

5.0 SEDIMENT MANAGEMENT PROCEDURES

5.1 SANDBOX OPERATIONS

The sandbox located at the head of the flowline beneath Democrat Dam functions as a sediment trap, preventing abrasive sediments from entering the flowline and damaging downstream hydroelectric facilities. Water from the diversion dam flows into the sandbox, which is equipped with two slide-gate valves. A portion of the water released through these valves is diverted to the Kern River No. 1 Powerhouse, while the remainder is discharged back into the Kern River. One of the valves remains open year-round to maintain minimum instream flow requirements—15 cfs from October 1 through May 31, and 50 cfs from June 1 through September 30. Because water flows continuously through the sandbox, sediment is naturally flushed without accumulating. As a result, there is no formal operational program for sediment removal from the sandbox.

5.2 DEMOCRAT DAM OPERATIONS

5.2.1 Background Information

Sediment naturally accumulates behind Democrat Dam and is temporarily stored within the impoundment. To manage this sediment, the dam is equipped with a drain gate, also known as the low-level outlet, located at the base of the dam and below the diversion intake gates. The low-level outlet gate measures 4 feet wide by 8 feet tall and, when fully opened, can release up to 800 cfs of flow. It can operate concurrently with the diversion to the powerhouse.

The low-level outlet can be operated in two modes:

1. Partially open – when the gate is opened less than 50% (i.e., under 36 inches), allowing flows between 100 and 400 cfs.
2. Fully open – when the gate is opened more than 50%, allowing flows between 400 and 800 cfs.

When Democrat Dam Impoundment is full and the low-level outlet is open, either partially or fully, only sediments from the area immediately surrounding the low-level outlet and the diversion intake are released downstream (partial sediment bypass). However, if the low-level outlet is fully opened and inflows to the impoundment are less than 800 cfs, the reservoir may eventually drain completely. This results in a full sediment bypass, mobilizing sediment from the entire impoundment rather than just from the vicinity of the low-level outlet and diversion intake.

5.2.2 Sediment Management Procedures

The sediment management strategy for Democrat Dam includes two operational approaches, partial sediment bypass and full sediment bypass, designed to allow sediment to bypass the dam while emulating natural sediment transport processes and protecting both infrastructure and downstream ecological resources (Table SMP-1).

5.2.2.1 Partial Sediment Bypass

Partial sediment bypass at Democrat Dam includes both precipitation event and normal high-flow bypasses. These two operations involve opening the low-level outlet, either partially or fully, to allow sediment to bypass Democrat Dam and are described below:

- **Precipitation Event High Flows** – During precipitation-driven high flows—winter storms or summer and fall thunderstorms—SCE temporarily ceases water diversion and fully opens the low-level outlet at Democrat Dam to allow naturally occurring turbid flows from upstream to pass over the dam and through the low-level outlet. During this operation, the sediment load is carried by the full river flow, mimicking the natural sediment transport regime of the river and protecting the turbine infrastructure from fine sediment abrasion. Once flood and naturally turbid flow conditions have improved and turbidity conditions subside, normal operations resume (low-level outlet is closed and diversion is opened). This procedure was formerly described as peak flow sediment bypass.
- **Normal High Flows** – Under normal high-flow conditions, when flows in the bypass exceed 600 cfs (July 1–March 14) or 1,200 cfs (March 15–June 30; smallmouth bass / hardhead minnow spawning period), SCE partially or fully opens the low-level outlet to allow sediment around the low-level outlet and the diversion intake to pass downstream, as needed. Because the impoundment remains full, only sediment immediately around the low-level outlet intake and near the diversion intake is passed downstream. This procedure was formerly described as operational sluicing.

5.2.2.2 Full Sediment Bypass

- Full sediment bypass involves lowering the water level in Democrat Dam Impoundment and allowing the river and sediment to pass through the low-level outlet. During this operation, the low-level outlet is opened, and water is not diverted to the powerhouse. This procedure was formerly described as full pond drain.
- Full sediment bypass is anticipated to occur annually when the following conditions are met:
 - Inflows to the Democrat Dam Impoundment are less than 800 cfs.
 - Forecasted flows from Lake Isabella are deemed to be sufficient to transport the deposited sediment through the bypass reach in the same water year.

- The date is between November 15 and March 14 to (1) avoid impacts on hardhead minnow spawning and rearing (March 15–June 30), (2) avoid impacts on northwestern pond turtle juveniles and adults during the in-water rearing period (March 15–November 14), and (3) seasonally align releases to meet dissolved oxygen and temperature requirements in the Water Quality Control Plan for the Tulare Lake Basin.
- Prior to conducting a full sediment bypass, SCE will notify downstream stakeholders.

5.2.3 Emergency Related Sediment Removal

Over the term of the new license, large-scale watershed/landscape events (i.e., wildfire, intense rainfall/atmospheric river events) may occur, resulting in large sediment deposits in the Kern River. Continuous bypass may not be capable of mobilizing the volume or larger bed material, therefore physical removal or other sediment management activities may be necessary. Following such events, SCE will consult with appropriate resource agencies to identify suitable sediment management emergency actions, so the Project operations remain intact, and the intake gates remain open and clear of sediment.

6.0 MONITORING

The following monitoring will occur related to Democrat Dam Impoundment sediment management:

- Within the first full calendar year following license issuance (Year 1), a qualitative analysis of sediment will be conducted at Democrat Dam Impoundment and at the five historical monitoring locations in the bypass reach (Map SMP-2). The analysis will include observations of sediment volume. The analysis will provide baseline conditions to determine the volume of sediment in the impoundment and the sediment conditions in the bypass reach pools.
- For the subsequent five years after license issuance (Years 2–6):

Estimate the volume of sediment removed each year from Democrat Dam Impoundment and sediment conditions in the bypass reach pools using qualitative observations of sediment. Monitoring is best completed in the bypass reach (Map SMP-2) during the winter low-flow period. Monitoring of Democrat Impoundment would typically be completed during full sediment bypass events (during and after the level drops).

Before (1 day), during, and after (1 day) the full sediment bypass, monitor dissolved oxygen and turbidity at United States Geological Survey (USGS) Gage No. 11192500; SCE Gage No. 409 (Kern River near Democrat Springs).

7.0 REGULATORY COMPLIANCE

Sediment management activities will be conducted in accordance with any agency permits issued by the USACE, State Water Resources Control Board (State Water Board), and California Department of Fish and Wildlife (CDFW). These may include:

- USACE Clean Water Act Section 404 Permit
- State Water Board Clean Water Act Section 401 Water Quality Certification
- CDFW Fish and Game Code Section 1600 Lake/Streambed Alteration Agreement

Initial sediment management activities may require supplemental permitting while the new sediment management activities go into effect, specifically for the full sediment bypass procedure. However, long-term sediment management activities are designed to mimic natural sediment transport processes and may not require long-term permitting once initial studies demonstrate operations are in alignment with these natural processes.

8.0 REPORTING

SCE will prepare an annual report documenting sediment management and monitoring activities for the previous calendar year. The report will be submitted to the Forest Service, State Water Board, and CDFW by March 31 each year for a 60-day review. A final report, that addresses applicable agency comments, will be filed with FERC by June 30 and distributed to the Forest Service, State Water Board, and CDFW.

Following Year 6, SCE will provide a monitoring summary report and make a recommendation to continue, modify, or discontinue the monitoring described in Section 6. This will include a recommendation to modify or continue the existing full sediment bypass procedure, if appropriate. SCE will provide a draft monitoring summary report to the Forest Service, State Water Board, and CDFW for review and comment by March 31. A final monitoring summary report will be filed with FERC by June 30 and distributed to the Forest Service, State Water Board, and CDFW.

TABLES

Table SMP-1. Democrat Dam Impoundment Sediment Management Strategies

Sediment Management Strategy		Conditions Necessary for Sediment Management Activity Implementation		
		Flow	Dates Excluded	Frequency
Partial Sediment Bypass	Precipitation Event High Flows	<ul style="list-style-type: none"> High flow/turbidity into Democrat Dam Impoundment from storms 	None	Dependent on frequency of storm events
	Normal High Flows	<ul style="list-style-type: none"> Bypass reach flow >600 cfs (July 1 to March 14) Bypass reach flow >1,200 cfs (March 15 to June 30) 	None	As needed
Full Sediment Bypass	Full Sediment Bypass	<ul style="list-style-type: none"> Inflows to impoundment <800 cfs to implement bypass Inflows to bypass reach are sufficient to flush released sediments downstream 	March 15–November 14	Annually, except during extended drought periods

Key: °C=degrees Celsius
cfs=cubic feet per second

MAPS



Facilities

- Dam
- Water Conveyance Feature
- Tunnel
- Flume
- Conduit
- Sandbox
- Spillway
- Gage
- Ancillary Facility
- Ancillary Feature
- Powerline
- FERC Boundary

Transportation

- Project Road
- Other Road
- Project Trail

Other Features

- Watercourse

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map SMP-1b

**Project Facilities near
Democrat Dam and Impoundment**

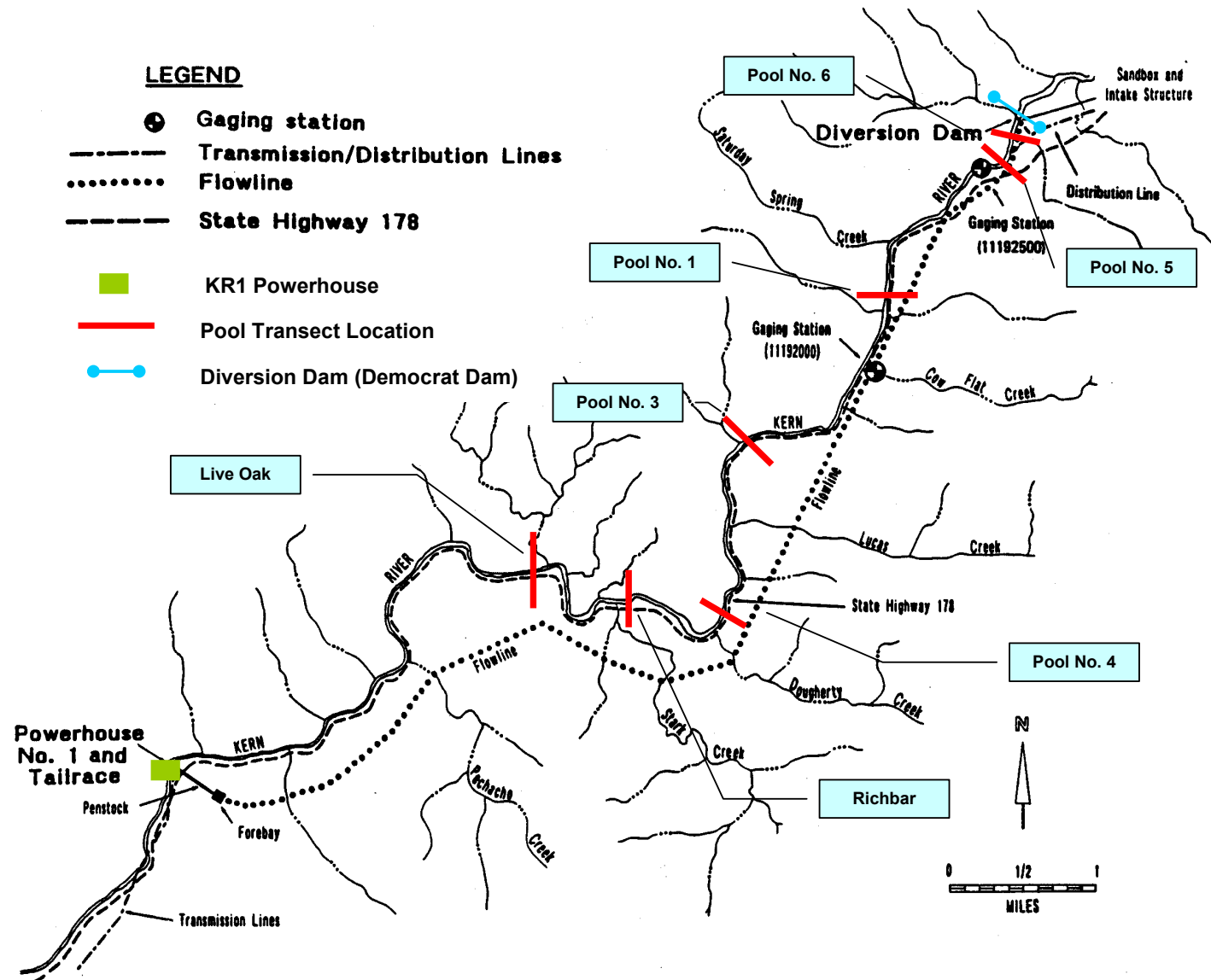
Projection: UTM Zone 11
Datum: NAD 83

Date: 10/22/2025

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Map SMP-2. Bypass Reach Sediment Monitoring Locations

DRAFT
FISH POPULATION MONITORING PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
FERC Project No. 1930



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
3.0 Monitoring Locations and Schedule.....	1
4.0 Methods.....	2
4.1 Impoundment Sampling	2
4.2 Bypass Reach (River) Sampling	2
4.3 Fish Processing	3
4.4 Northwestern Pond Turtle and Incidental Species	3
5.0 Reporting	3
6.0 Consultation.....	4
7.0 References	4

LIST OF TABLES

Table FPMP-1. Approximate Fish Monitoring Site Locations and Sampling Methods.....	7
--	---

LIST OF MAPS

Map FPMP-1. Approximate Fish Sampling Locations in the Bypass Reach	9
Map FPMP-2. Approximate Shoreline Electrofishing Sampling Locations in the Democrat Dam Impoundment	10

LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CPUE	catch-per-unit-effort
FERC	Federal Energy Regulatory Commission
FPMP	Fish Population Monitoring Plan

Forest Service	United States Forest Service
Project	Kern River No. 1 Hydroelectric Project
SCE	Southern California Edison
State Water Board	State Water Resources Control Board

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Fish Population Monitoring Plan (FPMP) for the Kern River No. 1 Hydroelectric Project (Project). The FPMP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

The FPMP is based, in part, on the Fish Monitoring Plan (SCE 1999) that was implemented pursuant SCE's FERC license issued in 1998 and the AQ 3 – Fish Population Technical Study Plan implemented as part of the relicensing effort (SCE 2024).

2.0 PURPOSE AND OBJECTIVES

The purpose of this FPMP is to provide monitoring of the fish assemblage within the Project area. The objectives of the FPMP include:

- Document fish species composition, distribution, and abundance in the impoundment and bypass reach.
- Characterize fish size, condition factor, and approximate population age structure in the impoundment and bypass reach.

3.0 MONITORING LOCATIONS AND SCHEDULE

The study area includes the Democrat Dam Impoundment and the Kern River bypass reach from Democrat Dam to the Kern River No. 1 Powerhouse Tailrace.

- SCE will sample at the following monitoring sites (Table FPMP-1, Map FPMP-1, Map FPMP-2):
 - Five approximately 100-meter-long, or greater, monitoring sites in the bypass reach that generally encompass sampling sites surveyed during the 1999–2008 and 2025 monitoring (SCE 1999, SCE 2025); and
 - Two separate >500-meter-long transects of shoreline habitat (one on each shore) in the Democrat Dam Impoundment (SCE 2025).
- Monitoring will occur in the late summer or fall when flow conditions are suitable for sampling. Sampling in the bypass reach will occur during non-spill, minimum flow conditions (approximately 25 cubic feet per second or less) so that the fish assemblage can be safely and effectively sampled.
- Monitoring will be conducted in the first full calendar year following license issuance (Year 1) at each of the monitoring sites. Monitoring will then be conducted again in Year 6. If flow conditions preclude sampling in a scheduled year, sampling will occur in the first subsequent year when flow conditions are

suitable. Following each sampling event, SCE will provide a summary monitoring report to the agencies (refer to Section 5).

4.0 METHODS

Sampling methods will generally be consistent with the relicensing studies (AQ 3 – Fish Population Technical Study Plan, SCE 2024) and will include the following specific methods depending on study area.

4.1 IMPOUNDMENT SAMPLING

The impoundment sampling methods will include electrofishing and trammel netting (Table FPMP-1) (poor water clarity precludes snorkeling at this site).

- Electrofishing will be conducted using a Smith-Root™ “E-Cat” light-duty cataraft electrofisher (E-Cat) or similar equipment with oars or a small outboard motor. Sampling will occur when river flow allows safe boat deployment with no risk of spill over the diversion dam.
- Electrofishing sampling time (i.e., number of minutes sampled), electrofisher settings, and the length / global positioning system track of each transect will be recorded. Sampling at each transect should occur for approximately 45 or more minutes (i.e., the number of minutes the electrofisher is engaged).
- The boat will be used to set two trammel nets for 4 hours (daylight) in deeper portions of the impoundment that cannot be electrofished effectively (i.e., in water greater than 6-feet-deep). Hundred-yard-long monofilament trammel nets (e.g., 8-foot-high, 2-inch-square-diameter inner wall, and 12-inch square outer walls), or similar, will be used.

4.2 BYPASS REACH (RIVER) SAMPLING

The Kern River bypass reach study sites will be sampled using electrofishing and trammel netting methods (Table FPMP-1) (poor water clarity precludes snorkeling at these sites).

- Where natural river features are amendable to block netting, multi-pass electrofishing (e.g., Reynolds 1996; Van Deventer and Platts 1989; Rexstad and Burnham 1992) will be used to sample and estimate fish populations in shallow stream habitats (approximately 1 meter deep or less). At other locations, single-pass electrofishing will occur.
 - Where possible, the sampling sites will be partitioned into mesohabitat types for sampling.
 - The amount of area at each multi-pass sampling location will be quantified and the length/area of single-pass electrofishing locations will be quantified. Electrofishing time will also be recorded.

- At multi-pass sampling locations, captured fish from each pass will be kept in separate live wells/buckets to be measured, weighed, and enumerated separately.
- One or two trammel nets (e.g., 8-foot-high, 2-inch-square-diameter inner wall, and 12-inch square outer walls) will be set in the river for 4 hours (daylight) in pool habitat upstream of downstream of each electrofishing site that is deeper than can be effectively electrofished (i.e., in water greater than 6-feet-deep).

4.3 FISH PROCESSING

- Fish will be anesthetized with carbon dioxide (if necessary), enumerated, identified to species, and measured (fork length and weight).
- Fish will be returned to the study site when the sampling is completed.
- Sampling protocols and field data forms will be consistent with those in Flosi et al. 2010.
- The mesohabitat types sampled and the lengths and widths of the habitat units sampled will be recorded to calculate fish abundance by length and area (density) of stream sampled.
- If fish mortalities occur, they will be recorded, and the fish will be properly placed back into the river system for organic decomposition in deep pools by puncturing their air bladders.

4.4 NORTHWESTERN POND TURTLE AND INCIDENTAL SPECIES

At the Democrat Dam Impoundment and bypass reach, observations of federally proposed threatened northwestern pond turtle (*Actinemys marmorata*) and/or other incidental aquatic species will be documented.

5.0 REPORTING

Following each monitoring event, study methods and results will be documented in a report that includes the following:

- Fish abundance will be reported by species and, depending on the sampling method used, by the following:
 - Boat electrofishing – Fish catch-per-unit-effort (CPUE) based on time electrofishing (e.g., fish/hour) and fish per length and/or area of stream sampled (whichever is most appropriate for the monitoring site).
 - Backpack electrofishing -- Both as:

- Fish per area (fish/acre) and biomass per area (pounds/acre) for portion of the monitoring site that can be block netted and multi-pass electrofished; and
 - Fish CPUE (fish/hour) for the entire monitoring site based on the combined first pass electrofishing data at block netted/multi-pass locations and first pass electrofishing at single-pass electrofishing locations that cannot be block netted.
 - Trammel netting – Fish per net-hour will be calculated.
- Fish distribution for each species in the study area will be reported based on the sampling data.
 - Length-frequency histograms of sampled fish species will be reported to estimate the age structure of fish populations.
 - Fulton's condition factor will be reported at each monitoring site by species using the measured weight and length data.
 - Fish will be inspected for disease or injury.
 - Fish abundance, distribution, and condition in the study area will be compared to previous studies, including SCE (2009) and SCE (2025).
 - Upon request, an electronic database (e.g., Excel spreadsheet) will be provided of fish sampling data (date, location, fish species, fish size, sampling pass, etc.) to resource agencies.

6.0 CONSULTATION

SCE will provide a draft FPMP report to the United States Forest Service (Forest Service), State Water Resources Control Board (State Water Board), and California Department of Fish and Wildlife (CDFW) by March 31 each year following monitoring for a 60-day review. A final FPMP report, that addresses applicable agency comments, will be filed with FERC by June 30 each year following monitoring and distributed to the Forest Service, State Water Board, and CDFW.

7.0 REFERENCES

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- Reynolds, J.B. 1996. Electrofishing. Pages 83-120 in B.R. Murphy and D.W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.
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TABLES

Table FPMP-1. Approximate Fish Monitoring Site Locations and Sampling Methods

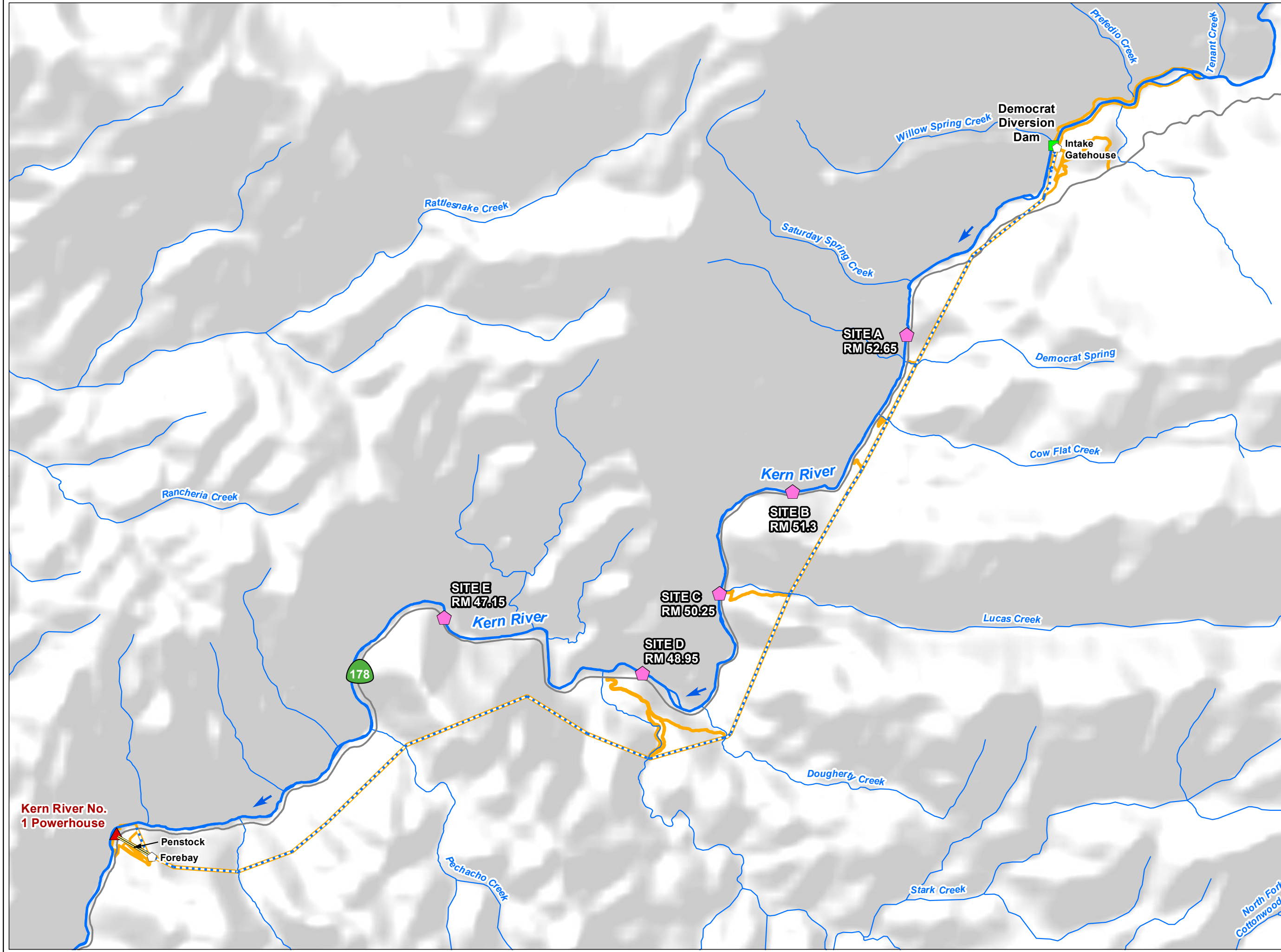
Site	River Mile	Survey Method	Upstream End ¹		Downstream End ¹	
			Longitude	Latitude	Longitude	Latitude
Democrat Dam	RM 54.5 – 55.5	Raft or Boat Electrofishing and Trammel Netting	TBD			
Site A – Kern River Bypass Reach ²	RM 52.65	Backpack (or Barge) Electrofishing and Trammel Netting	35.50533	-118.69146	35.50465	-118.69156
			35.51016	-118.69098	35.50928	-118.69100
Site B – Kern River Bypass Reach	RM 51.30		35.49318	-118.70333	35.49304	-118.70433
Site C – Kern River Bypass Reach	RM 50.25		35.48406	-118.71164	35.48312	-118.71192
Site D – Kern River Bypass Reach ³	RM 48.95		35.47585	-118.71981	35.47625	-118.72101
Site E – Kern River Bypass Reach ⁴	RM 47.15		35.48044	-118.74276	35.48106	-118.74316

Notes:

- ¹ The upstream and downstream coordinates for the impoundment transects will be determined in the field during the initial monitoring effort.
- ² Due to the presence of deep pool habitats at Site A (not wadable and not suitable for trammel nets or an E-cat), two non-consecutive suitable for electrofishing will be sampled.
- ^{3,4} Coordinates provided for Sites D and E represent reaches suitable for electrofishing. Trammel nets will be deployed in pools immediately downstream of these sites, as feasible.

Key: RM = River Mile
TBD = To Be Determined

MAPS



Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Flowline
- Penstock
- FERC Boundary

Other Features

- Flow Direction
- Watercourse
- Highway

Fish Population Sampling Location

- Site Location w/ID and Rivermile

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

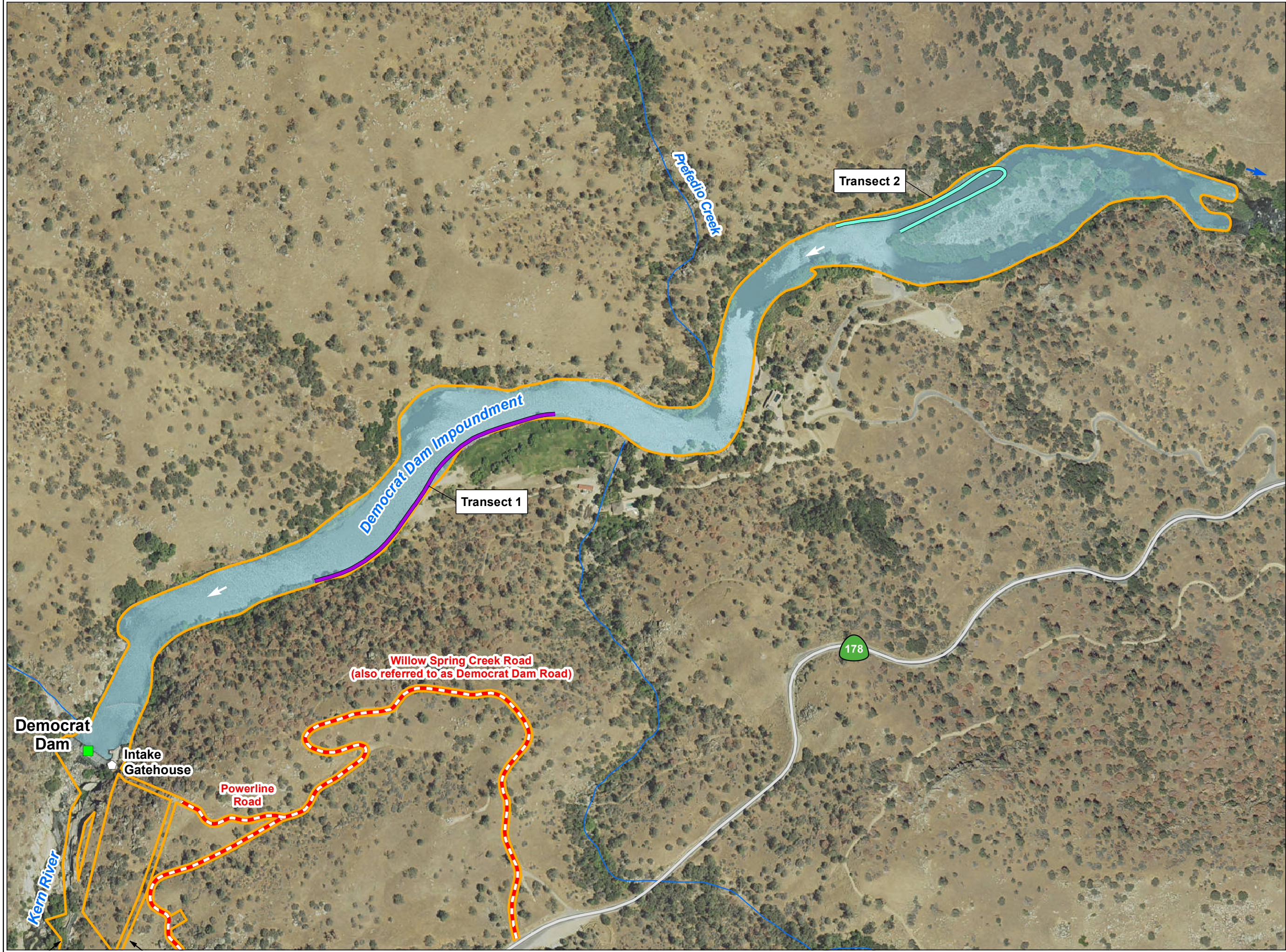
Map FPMP-1
Approximate Fish Sampling Locations in the Bypass Reach

0 0.25 0.5
Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 12/12/2025

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Facilities

- Dam
- Water Conveyence Feature
- FERC Boundary

Hydrology

- Flow Direction
- Watercourse
- Waterbody

Transportation

- Project Road
- Other Road

Proposed Shoreline Transects

- Transect 1
- Transect 2

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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map FPMP-2

**Approximate Shoreline Electrofishing
Sampling Locations in the
Democrat Dam Impoundment**

0 250 500
Feet

Projection: UTM Zone 11
Datum: NAD 83

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DRAFT
PROJECT ACCESS ROADS AND TRAILS
MANAGEMENT PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
3.0 Project Location.....	1
4.0 Project Access Roads and Trails Maintenance	1
4.1 Road Maintenance.....	2
4.2 Trail Maintenance	2
5.0 Environmental Measures.....	2
5.1 Measures to Reduce Erosion and Sedimentation.....	2
5.1.1 Grading and Contouring.....	2
5.1.2 Construction of Erosion-Control Structures.....	2
5.1.3 Water Bars, Sediment Fences, etc.	3
5.1.4 Slope Stabilization	3
5.1.5 Revegetation.....	3
5.1.6 Monitoring.....	3
5.2 Environmental Screening Process for Major Road Maintenance.....	3
6.0 Emergency Road and Trail Repairs.....	4
7.0 Consultation.....	4
8.0 References	4

LIST OF TABLES

Table RTMP-1. Description of Project Access Roads and Trails	6
--	---

LIST OF MAPS

Map RTMP-1. Project Vicinity and Land Jurisdiction.....	9
Map RTMP-2. Project Facilities Map Index	10
Map RTMP-2a. Project Facilities	11
Map RTMP-2b. Project Facilities	12

Map RTMP-2c. Project Facilities	13
Map RTMP-2d. Project Facilities	14
Map RTMP-2e. Project Facilities	15
Map RTMP-2f. Project Facilities	16
Map RTMP-2g. Project Facilities	17

LIST OF ACRONYMS

BMP	Best Management Practice
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
O&M	operations and maintenance
Project	Kern River No. 1 Hydroelectric Project
RTMP	Road and Trail Management Plan
SCE	Southern California Edison
SR	State Route

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Project Access Roads and Trails Management Plan (RTMP) for the Kern River No. 1 Hydroelectric Project (Project). The RTMP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

This RTMP was developed to support ongoing Project operations and maintenance (O&M) activities and incorporates measures from the current license (FERC 1998 and SCE 2004) pertaining to road and trail maintenance. No major changes in the existing roads and trails, nor in the maintenance of the existing roads and trails are proposed under the new license.

2.0 PURPOSE AND OBJECTIVES

The purpose of this RTMP is to establish a framework for SCE's long-term O&M responsibilities for Project roads and trails on National Forest System lands.

The objectives of the RTMP include:

- Describe SCE's responsibilities for O&M of Project roads and trails.
- Describe environmental measures that SCE will implement for road and trail maintenance activities.
- Identify protocols for emergency road and trail maintenance activities.
- Describe consultation requirements for coordinating and communicating road and trail maintenance activities with the United States Forest Service (Forest Service).

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California (Map RTMP-1). The Project occupies federal lands within the Sequoia National Forest, administered by the Forest Service. The Project includes eight roads and 11 trails, which provide access to Project facilities and allow SCE to conduct routine O&M activities. Descriptive information on each access road and trail is provided in Table RTMP-1 and Maps RTMP-2a–g depicts their locations.

4.0 PROJECT ACCESS ROADS AND TRAILS MAINTENANCE

Upon FERC approval, SCE will implement the RTMP, which includes regularly inspecting and maintaining the Project access roads and trails, to maintain continued safe operations of the Project. The maintenance performed under this plan will be consistent with the requirements of the Historic Properties Management Plan, Vegetation Management Plan, and Wildlife Resources Management Plan.

4.1 ROAD MAINTENANCE

Project access roads are regularly inspected and maintained during normal Project activities on an annual basis. Minor repairs are conducted annually during the late summer / fall and major repairs are implemented on an as-needed basis. Minor road maintenance generally includes debris removal; mechanical brushing of road edges; basic repairs, including blading or grading of native roads within the existing road prism to ensure a smooth surface and adequate drainage; filling of potholes; maintenance of erosion control features such as culverts (including inlets / outlets and dissipators), drains, ditches, and water bars; sealing or resurfacing existing roads; repair, replacement, or installation of access control structures such as posts, cables, rails, gates, and barrier rock; and repair / replacement of signage. Major road maintenance generally includes placement or replacement of culverts and other drainage features; major grading, and/or road replacement. Vegetation management may also be conducted concurrently with road maintenance. These O&M activities typically occur within previously disturbed areas, or in areas that are regularly maintained and cleared of vegetation surrounding the Project facilities.

4.2 TRAIL MAINTENANCE

Project access trails are regularly inspected during normal Project activities. Repairs and maintenance are conducted on an as-needed basis typically during late summer / fall. Trail maintenance generally includes debris and rock 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 / replacement of signage. Vegetation management may also be conducted concurrently with trail maintenance.

5.0 ENVIRONMENTAL MEASURES

5.1 MEASURES TO REDUCE EROSION AND SEDIMENTATION

The following sections describe measures to reduce erosion and sedimentation during Project road and trail maintenance activities that involve grading or soil disturbance.

5.1.1 Grading and Contouring

After ground-disturbing activities such as trenching are completed, the site will be graded to conform to natural ground contours. Whenever possible, efforts will be made to retain the original drainage patterns and not create patterns that will accelerate erosion.

5.1.2 Construction of Erosion-Control Structures

In areas prone to significant flows and in areas prone to erosion, structures such as riprap, rock gabions, or small concrete retaining structures may be necessary. Where required, sedimentation basins may be utilized to control sediments where work is conducted within or adjacent to streams. Except where required by the Forest Service, the basins will be temporary structures that will be used during construction or major road maintenance.

5.1.3 Water Bars, Sediment Fences, etc.

Where applicable, water bars will be used on slopes to dissipate the energy of flowing water and reduce soil erosion. The water bars will be placed at about 30 degrees perpendicular from the slope.

Where applicable, sediment fences or other Best Management Practices (BMP) (e.g., gravel bag berms, straw wattles) may be used near streams and in areas subjected to high runoff. These BMPs will be placed so that they slow down water and trap sediments.

5.1.4 Slope Stabilization

Where applicable, certified weed-free straw, and/or jute matting may be used in the stabilization of slopes. This material will be placed on graded slopes and used to hold the slope for natural germination of the seed bank or prior to revegetation and/or after revegetation until plants have been established. Jute matting is effective with revegetation efforts because plants can be placed in openings of the mats. Straw may also be placed as mulch and is most effective on small or gently-sloping areas where heavy erosion is not expected.

5.1.5 Revegetation

Revegetation may be required to prevent the establishment of non-native invasive plants in areas that have been cleared or are subject to larger areas of ground disturbance by SCE. Revegetation methods and plant pallets are site-specific and will require preparation of a revegetation plan or proposed plant palette to identify types of plants to be used and the appropriate method and time of planting. Only native species seed mixes or plant palettes will be used. SCE will consult with the Forest Service before implementing revegetation efforts.

5.1.6 Monitoring

The installed erosion and sedimentation control measures will be monitored and repaired, as needed. Observed erosional damage may be remediated or additional BMPs deployed, as feasible.

5.2 ENVIRONMENTAL SCREENING PROCESS FOR MAJOR ROAD MAINTENANCE

SCE implements an environmental screening process for major road maintenance activities. The purpose of the process is to review potential resource issues that the activity may affect. Protection measures are added based on the activity, location, timing; and the specific resources involved. When needed, additional permits or agency authorizations may be sought for certain activities. Protection measures for road maintenance activities may include, for example:

- Consultation with the Forest Service during the Annual Consultation Meeting.

- Annual review of the list of Endangered Species Act and other special-status wildlife species.
- Implementation of measures to reduce erosion and sedimentation (see Section 5.1).
- Incorporating applicable Forest Service BMPs.
- Implementation of resource-specific protection measures and procedures, where applicable, including:
 - Defining work areas to avoid sensitive environmental and cultural resources, including establishing appropriate protective buffers.
 - Establishing limited operating periods.
 - Pre-activity surveys and/or activity monitoring when resources are known to be present.
- Conducting the Annual FERC Environmental Training Program.

6.0 EMERGENCY ROAD AND TRAIL REPAIRS

In the event of an emergency incident that blocks road/trail access to a Project facility and/or threatens public safety, SCE will notify the Forest Service 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 Forest Service and determine if additional actions are necessary. Such emergency work may also be discussed at the Annual Consultation Meeting. Other resource agencies will be consulted as required.

7.0 CONSULTATION

Over the term of the new license, SCE will participate in an Annual Consultation Meeting with the Forest Service to discuss Project O&M activities that were implemented the previous year, including any emergency repairs, and identify activities planned for the next calendar year. The goals of this meeting are to share information, planned maintenance activities, and proposed avoidance and minimization measures.

8.0 REFERENCES

FERC (Federal Energy Regulatory Commission). 1998. Order Issuing New License (Major Project), Kern River No. 1 Hydroelectric Project. FERC Project No. 1930-014. Jun 16.

SCE (Southern California Edison Company). 2004. Kern River No. 1 Hydroelectric Project (FERC No. 1930) Resource Plans: Plan for Control of Erosion, Stream Sedimentation, Soil Mass Movement and Dust. September.

TABLES

Table RTMP-1. Description of Project Access Roads and Trails

Project Facility ¹	Start	End	Overall Length		Width (feet)	Surface Treatment	Gated
			Feet	Mile			
Project Access Roads							
Willow Spring Creek Road ²	Kern Canyon Road (SR 178)	Conduit No. 2	4,892	0.93	16	Paved/Aggregate	Yes
Powerline Road	Willow Spring Creek Road	Intake Gatehouse to Flume No. 1 Powerline	484	0.09	16	Native	Yes
Flume No. 1 Road	Willow Spring Creek Road	Flume No. 1	497	0.09	20	Native	Yes
Dougherty Creek Road	Stark Creek Road	Dougherty Creek Trail	577	0.11	20	Native	Yes
Stark Creek Road	Kern Canyon Road (SR 178)	Flume No. 6 Stark Creek	4,338	0.82	20	Paved/Aggregate	Yes
Forebay Operations Area Road	Kern Canyon Road (SR 178)	Forebay Operations Area	670	0.13	10	Paved	Yes
Lower Powerhouse Road	Upper Powerhouse Road	Switchyard	483	0.09	20	Paved/Aggregate	Yes
Upper Powerhouse Road	Kern Canyon Road (SR 178)	Powerhouse	521	0.10	40	Paved	Yes
Project Access Trails							
Democrat Gage Trail	Flume No. 1 Road	Gaging Cableway	1,579	0.30	4	Native	No
Conduit No. 3 Trail	Kern Canyon Road (SR 178)	Conduit No. 3	266	0.05	4	Native	No
Cow Flat Creek Trail	Kern Canyon Road (SR 178)	Flume No. 2 Cow Flat Creek	727	0.14	4	Native	No
Cow Flat Creek to Conduit No. 6 Trail ³	Cow Flat Creek	Conduit No. 6	3,246	0.61	4	Native	No
Lucas Creek Trail	Kern Canyon Road (SR 178)	Flume No. 4 Lucas Creek	2,758	0.52	4	Native	No
Dougherty Creek Trail	Dougherty Creek Road	Flume No. 5 Dougherty Creek	2,351	0.45	4	Native	No
Stark Creek Trail	Stark Creek Road	Adit 13 and 14	6,081	1.15	4	Native	No

Project Facility ¹	Start	End	Overall Length		Width (feet)	Surface Treatment	Gated
			Feet	Mile			
Forebay to Conduit No. 9 Trail	Forebay	Conduit No. 9	3,580	0.68	4	Native	Yes
Overflow Spillway Trail	Forebay Operations Area Lot	Forebay Overflow Spillway	629	0.12	4	Native	No
Forebay Operations Area to Aerial Tram Upper Landing Trail	Forebay Operations Area Lot	Aerial Tram Upper Landing	2,719	0.51	4	Native	No
Access Trail to Aerial Cable Upper Mount	Aerial Tram Upper Landing to Forebay Walkway	Aerial Cable Upper Mount	234	0.04	4	Native	No

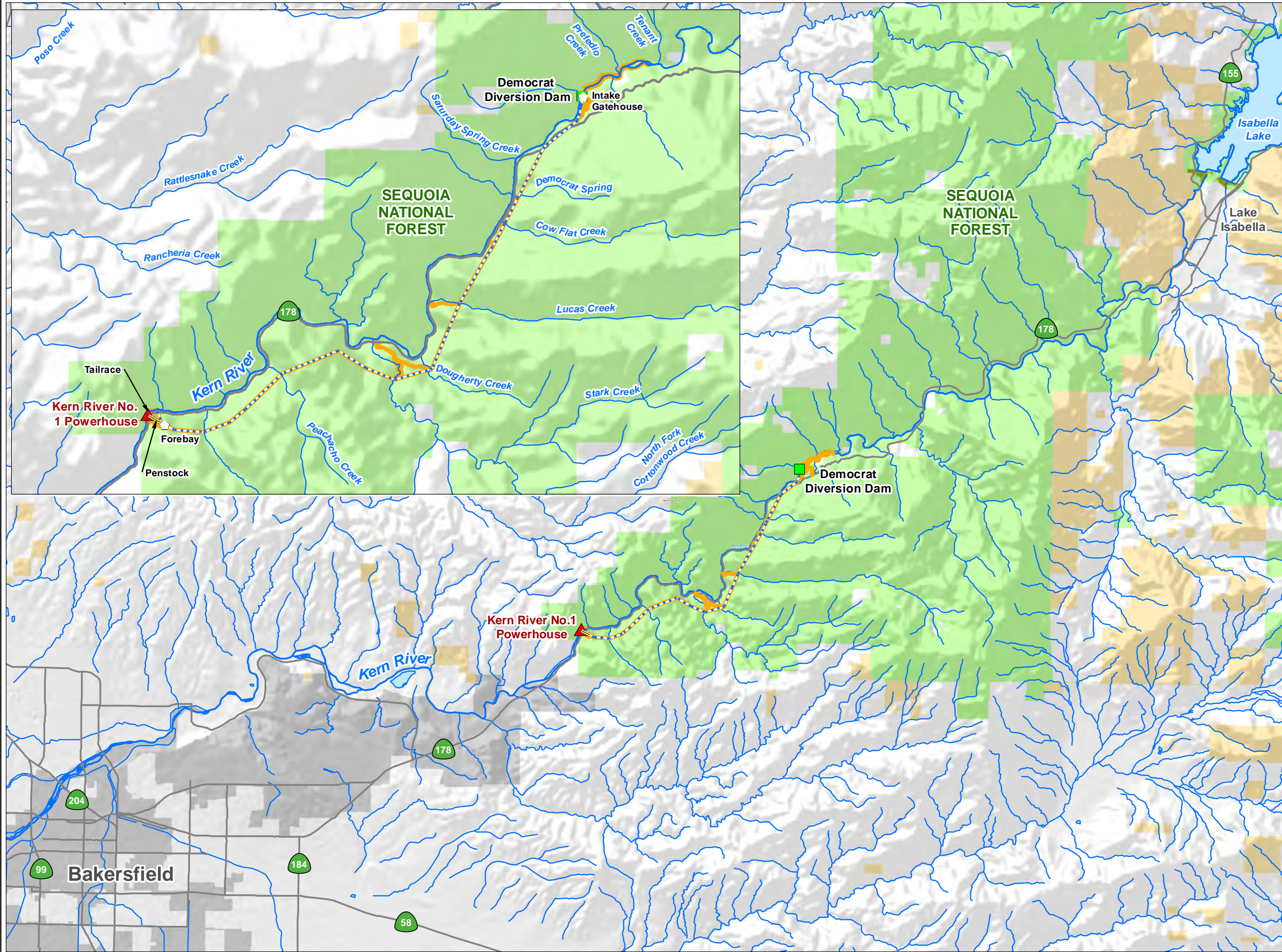
Notes: ¹ The list of Project facilities included in the Pre-Application Document was updated/revised during development of the Application for New License based on study results and additional information becoming available. Table 1 includes the most current list of Project access roads and trails.

² Willow Spring Creek Road is also referred to as Democrat Dam Road

³ The current Exhibit G maps on file with FERC indicate a trail extends from SR 178 up to Flume No. 3. However, during field reconnaissance staff confirmed this trail does not connect to SR 178. Instead, this trail runs along a portion of the Forest Service's Powerhouse Trail (from Cow Flat Creek to Conduit No. 6).

Key: SR = State Route

MAPS



Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Flowline
- Penstock
- FERC Boundary

Other Features

- Highway
- Watercourse
- Water Body

Land Jurisdiction*

- U.S. Forest Service
- U.S. Bureau of Land Management
- U.S. Army Corps of Engineers
- Private (Blank)

*SOURCE: BLM 2021

Inset map showing the project area location relative to Bakersfield and Lake Isabella. The project area is highlighted in red.

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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

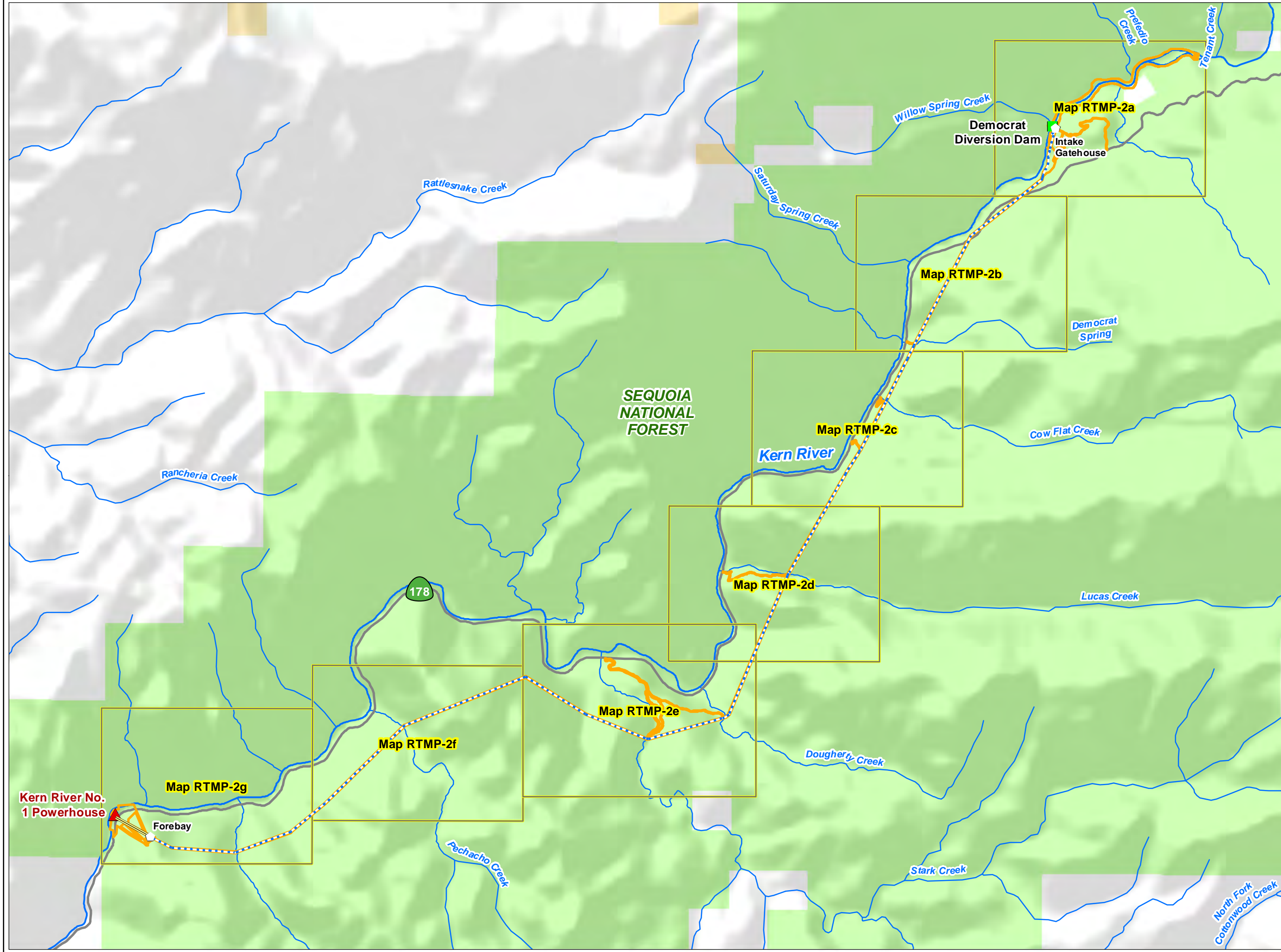
Map RTMP-1
Project Vicinity and Land Jurisdiction

0 0.5 1 2 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 10/10/2025

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Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Flowline
- Penstock
- FERC Boundary

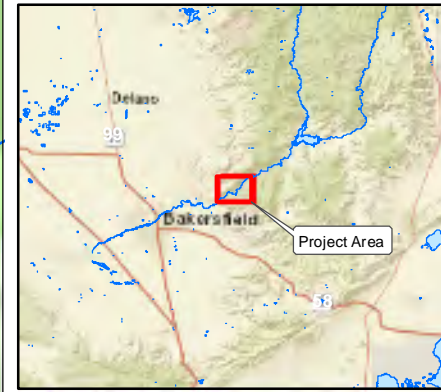
Other Features


- Watercourse
- Highway

Land Jurisdiction*

- U.S. Forest Service
- U.S. Bureau of Land Management
- Private (Blank)


*SOURCE: BLM 2021




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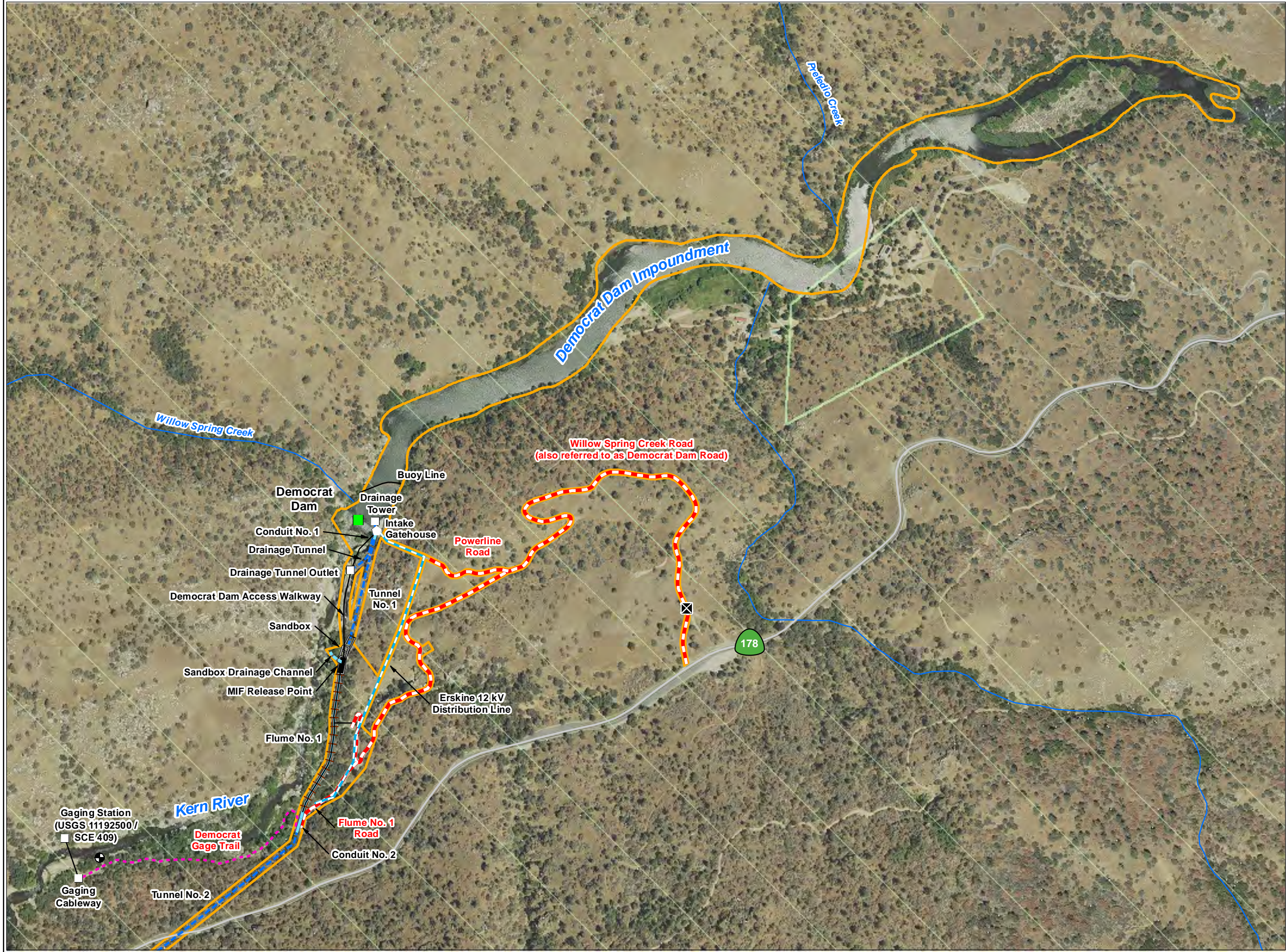
Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map RTMP-2
Project Facilities
Map Index


Date: 10/10/2025

0 0.25 0.5
Miles
Projection: UTM Zone 11
Datum: NAD 83

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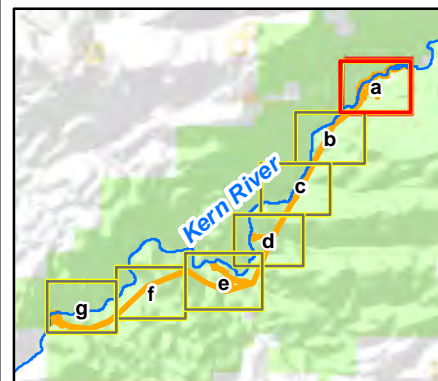
- Facilities**
- Dam
 - Powerhouse
 - Water Conveyance Feature
 - Tunnel
 - Flume
 - Conduit
 - Sandbox
 - Penstock
 - Spillway
 - Tailrace
 - Gage
 - Ancillary Facility
 - Ancillary Feature
 - Powerline
 - Communication / Powerline
 - FERC Boundary

- Transportation**
- Project Road
 - Other Road
 - Project Trail
 - Gate

- Other Features**
- Watercourse

- Land Jurisdiction***
- U.S. Forest Service

*SOURCE: BLM 2021



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map RTMP-2a
Project Facilities

0 250 500
Feet
Projection: UTM Zone 11
Datum: NAD 83

Date: 10/10/2025

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Facilities

Dam

Powerhouse

Water Conveyance Feature

Tunnel

Flume

Conduit

Sandbox

Penstock

Spillway

Tailrace

Gage

Ancillary Facility

Ancillary Feature

Powerline

Communication / Powerline

FERC Boundary

Transportation

Project Road

Other Road

Project Trail

Gate

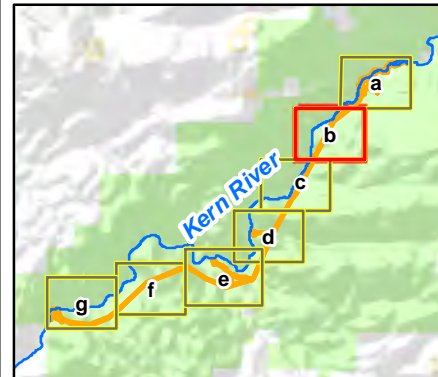
Other Features

Watercourse

Land Jurisdiction*

U.S. Forest Service

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA

EDISON

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Kern River No. 1 Hydroelectric Project

FERC Project No. 1930

Map RTMP-2b

Project Facilities

Date: 10/10/2025

0250500

Feet

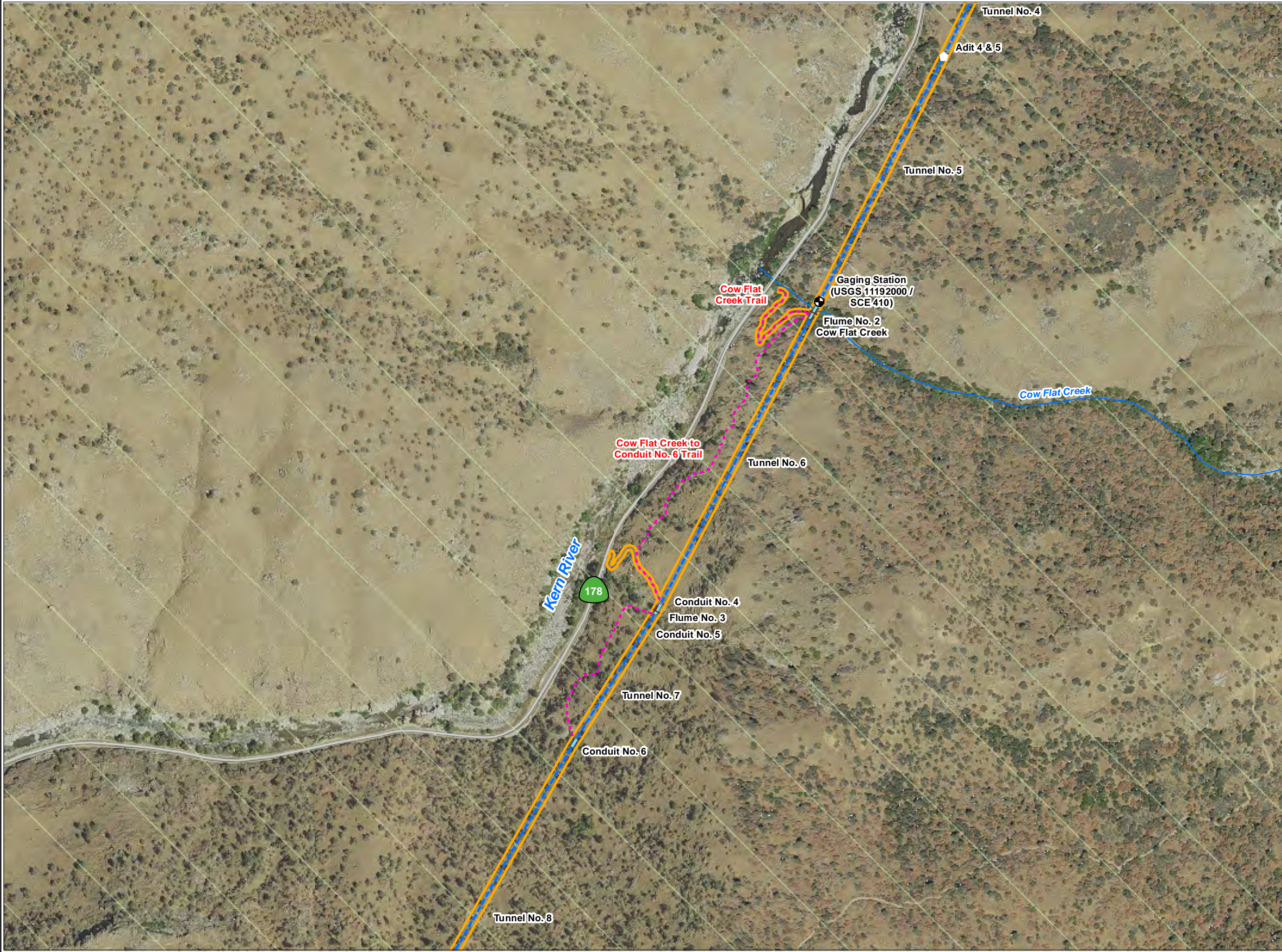
Projection: UTM Zone 11

Datum: NAD 83

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Facilities

Dam

Powerhouse

Water Conveyence Feature

Tunnel

Flume

Conduit

Sandbox

Penstock

Spillway

Tailrace

Gage

Ancillary Facility

Ancillary Feature

Powerline

Communication / Powerline

FERC Boundary

Transportation

Project Road

Project Trail

Other Road

Gate

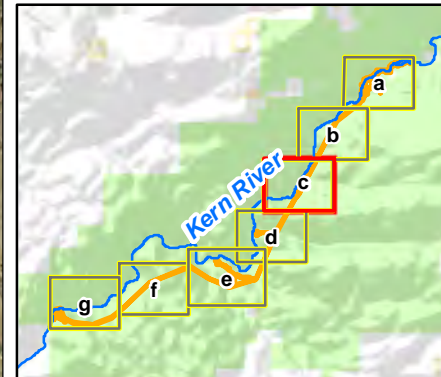
Other Features

Watercourse

Land Jurisdiction*

U.S. Forest Service

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA

EDISON

Energy for What's Ahead™

Kern River No. 1 Hydroelectric Project

FERC Project No. 1930

Map RTMP-2c

Project Facilities

Date: 10/10/2025

0250500

Feet

Projection: UTM Zone 11

Datum: NAD 83

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Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Tunnel
- Flume
- Conduit
- Sandbox
- Penstock
- Spillway
- Tailrace
- Gage
- Ancillary Facility
- Ancillary Feature
- Powerline
- Communication / Powerline
- FERC Boundary

Transportation

- Project Road
- Project Trail
- Other Road
- Gate

Other Features

- Watercourse

Land Jurisdiction*

- U.S. Forest Service

*SOURCE: BLM 2021

SOUTHERN CALIFORNIA EDISON
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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map RTMP-2d
Project Facilities

Date: 10/10/2025

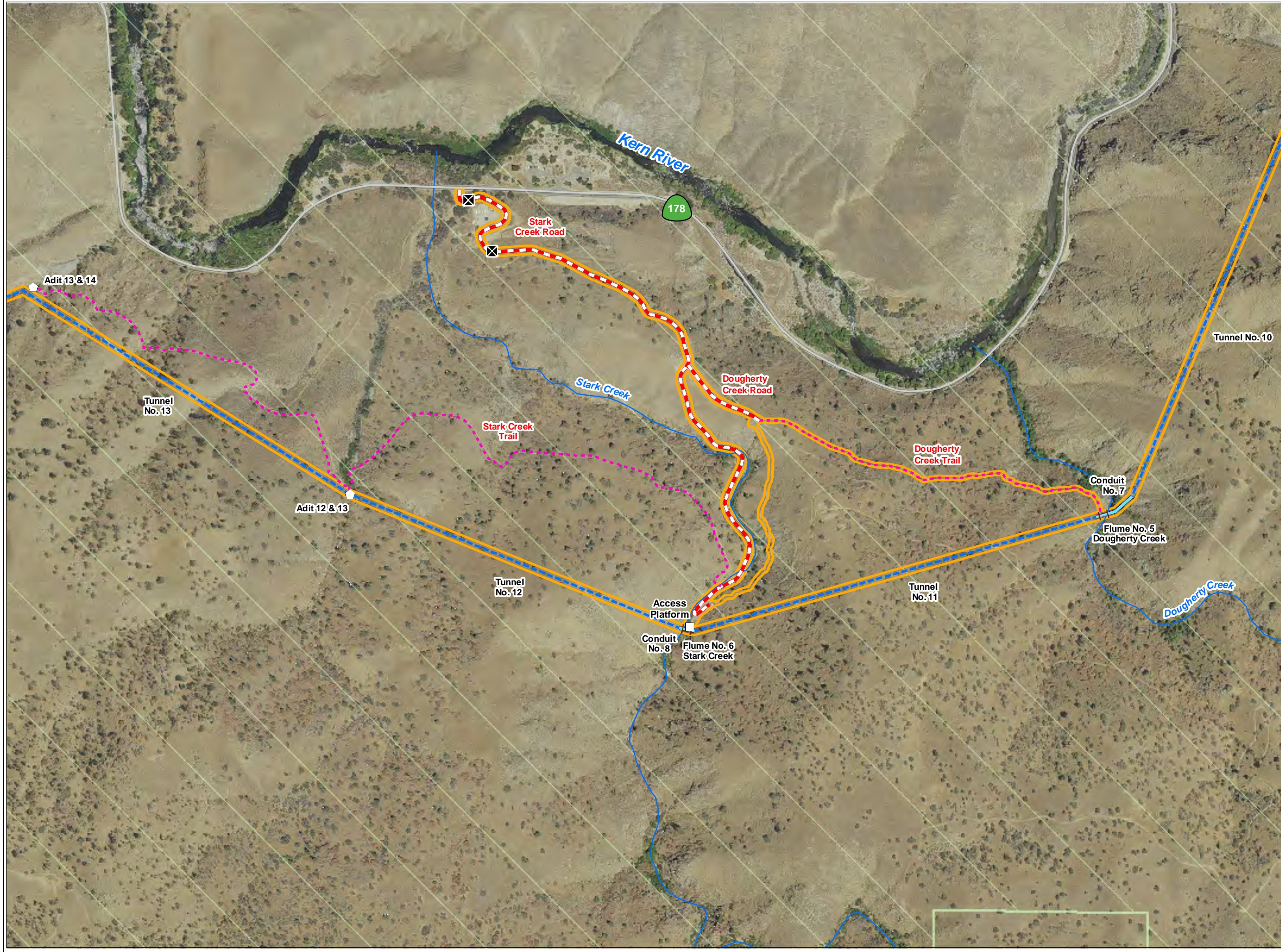
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Datum: NAD 83

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Facilities

Dam

Powerhouse

Water Conveyance Feature

Tunnel

Flume

Conduit

Sandbox

Penstock

Spillway

Tailrace

Gage

Ancillary Facility

Ancillary Feature

Powerline

Communication / Powerline

FERC Boundary

Transportation

Project Road

Project Trail

Other Road

Gate

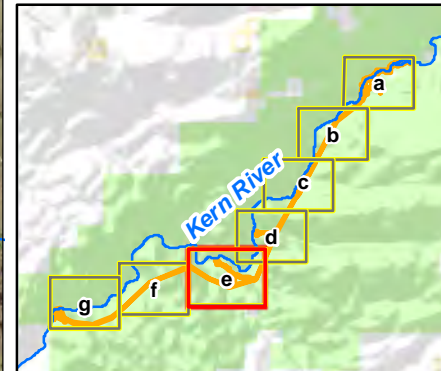
Other Features


Watercourse

Land Jurisdiction*

U.S. Forest Service

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA
EDISON
Energy for What's Ahead™

Kern River No. 1 Hydroelectric Project

FERC Project No. 1930

Map RTMP-2e

Project Facilities

Date: 10/10/2025

0250500
Feet

Projection: UTM Zone 11
Datum: NAD 83

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Facilities

Dam

Powerhouse

Water Conveyance Feature

Tunnel

Flume

Conduit

Sandbox

Penstock

Spillway

Tailrace

Gage

Ancillary Facility

Ancillary Feature

Powerline

Communication / Powerline

FERC Boundary

Transportation

Project Road

Other Road

Project Trail

Gate

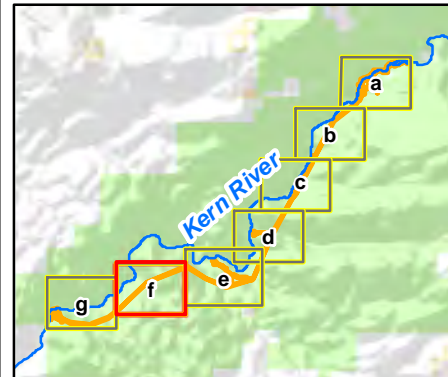
Other Features


Watercourse

Land Jurisdiction*

U.S. Forest Service


*SOURCE: BLM 2021



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map RTMP-2f
Project Facilities



0250500

Feet

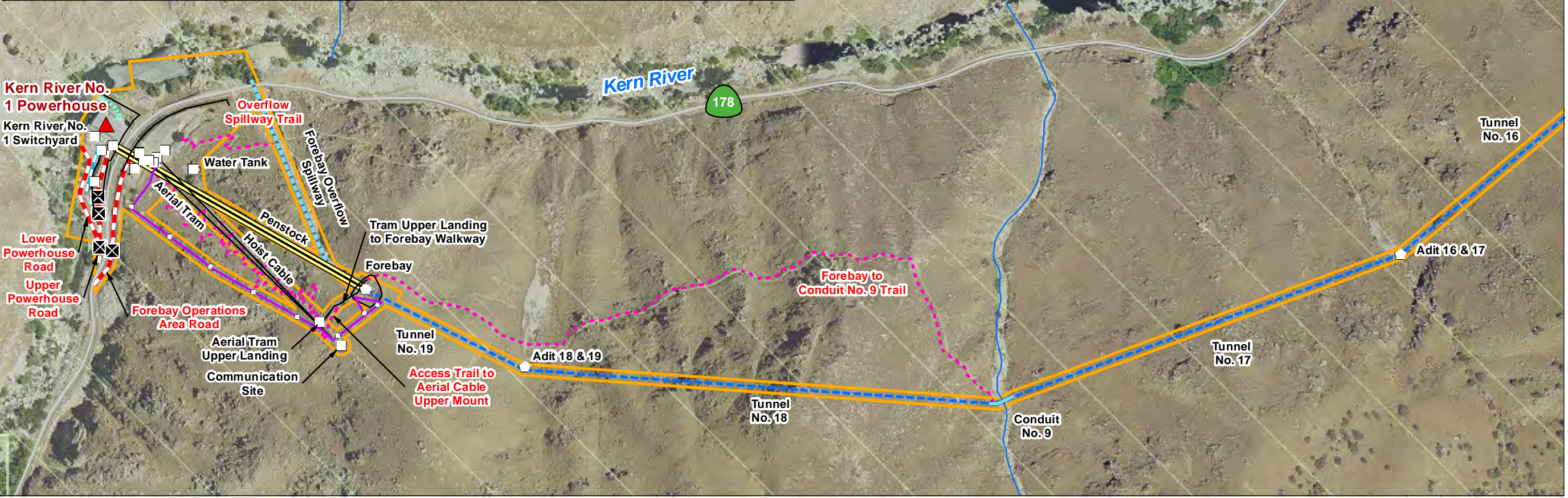
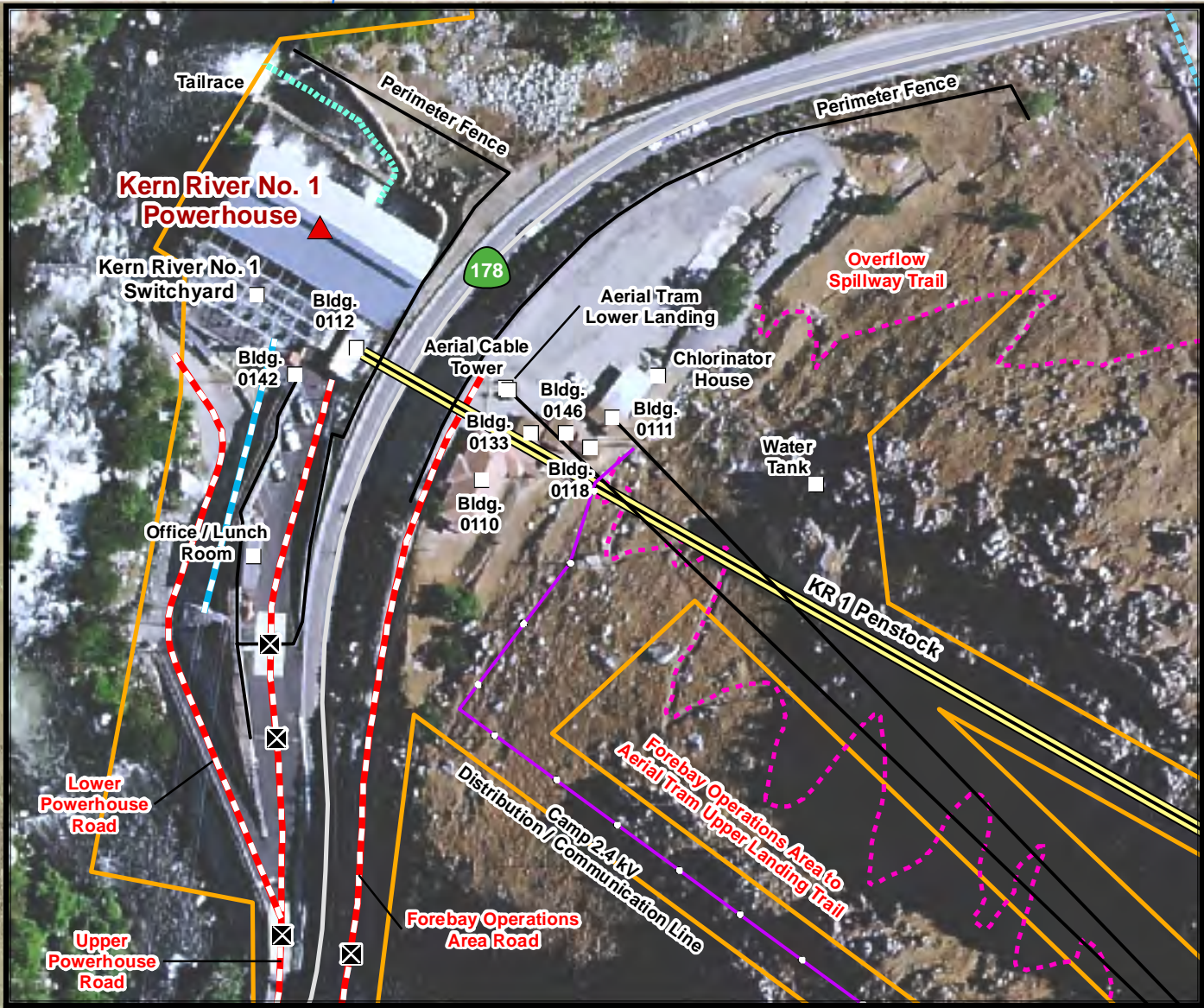
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Projection: UTM Zone 11
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Facilities

- Dam
- Powerhouse
- Water Conveyence Feature
- Tunnel
- Flume
- Conduit
- Sandbox
- Penstock
- Spillway
- Tailrace
- Gage
- Ancillary Facility
- Ancillary Feature
- Powerline
- Communication / Powerline
- FERC Boundary

Transportation

- Project Road
- Other Road
- Project Trail
- Gate

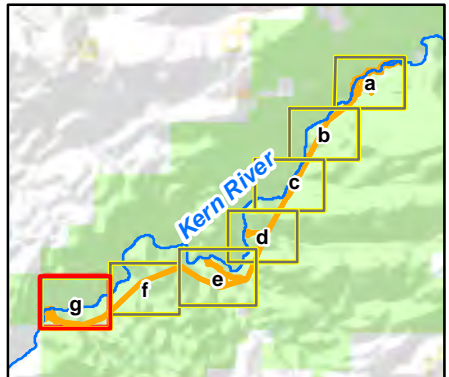
Other Features

- Watercourse

Land Jurisdiction*

- U.S. Forest Service

*SOURCE: BLM 2021



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map RTMP-2g
Project Facilities

0 250 500
Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 10/10/2025

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DRAFT
VEGETATION MANAGEMENT PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
2.1 Regulatory Requirements	1
3.0 Project Location.....	2
4.0 Project-Related Vegetation Management.....	2
4.1 Hand Trimming	2
4.2 Hazard Tree Removal.....	3
4.3 Herbicide Application	3
5.0 Special-status Plant Species and Native Vegetation Communities	3
5.1 Protection Measures and Best Management Practices	4
5.1.1 Environmental Training	4
5.1.2 SCE Environmental Screening Process.....	5
6.0 Non-native Invasive Plants	6
6.1 Prevention Strategies for Non-Native Invasive Plant Species.....	6
6.1.1 Equipment And Vehicle Cleaning	6
6.1.2 Weed-free Straw	6
6.1.3 Revegetation.....	7
6.2 Measures for Control of Non-Native Invasive Plants	7
6.3 Treatment of New and Established Non-Native Invasive Plant Infestations	7
7.0 Consultation.....	7
8.0 References	8

LIST OF TABLES

Table VMP-1. Comprehensive List of Plants Identified During 2024/2025 Botanical Surveys.....	10
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LIST OF MAPS

Map VMP-1. Project Vicinity Map.....	19
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LIST OF ACRONYMS

Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CRPR	California Rare Plant Rank
ETP	Environmental Training Program
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
NNIP	Non-native Invasive Plants
O&M	operations and maintenance
Project	Kern River No. 1 Hydroelectric Project
SCE	Southern California Edison
SQF	Sequoia National Forest
VMP	Vegetation Management Plan
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Training Program

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Vegetation Management Plan (VMP) for the Kern River No. 1 Hydroelectric Project (Project). The VMP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

This VMP includes a description of protection measures necessary for routine operations and maintenance (O&M) activities to avoid and protect sensitive botanical resources. Vegetation management activities described in this VMP include activities that are currently implemented by SCE and future activities to be implemented during the term of the new license.

2.0 PURPOSE AND OBJECTIVES

The purpose of the VMP is to describe protection measures and procedures for the management of vegetation within the FERC Project boundary, specifically around Project facilities. The overall objective of the VMP is to provide for the protection and avoidance of special-status botanical resources that could potentially be affected by SCE's vegetation management and routine O&M activities. Specifically, the VMP describes measures to avoid and minimize potential adverse effects from vegetation management within the FERC Project boundary, including protection of sensitive botanical resources; measures to prevent the introduction and/or spread of non-native invasive plants (NNIP) in the FERC Project boundary; reduction of wildfire loads, where needed, to provide defensible space; hazard tree removals; and maintenance of safe access around Project facilities, including access roads and trails.

The maintenance performed under this VMP will be consistent with the requirements of the Historic Properties Management Plan and Wildlife Resources Management Plan. The VMP also addresses the treatment of NNIPs within the FERC Project boundary. The VMP maintains consistency with the Sequoia National Forest (SQF) Land Management Plan (United States Forest Service [Forest Service] 2023, or its replacement).

2.1 REGULATORY REQUIREMENTS

The Project does not overlap with designated Critical Habitat for any listed plant species (United States Fish and Wildlife Service [USFWS] 2024). This VMP focuses on the special-status plant species that are known to occur or have the potential to occur in the FERC Project boundary.

This may include:

- Federal Endangered Species Act Listed, Proposed, or Candidate Species
- California Endangered Species Act Listed, Proposed, or Candidate Species
- Forest Service Species of Conservation Concern

- California Rare Plant Rank (CRPR) Species, Lists 1 and 2¹

Refer to Table VMP-1 for a list of all plants observed during botanical surveys conducted in 2024 and 2025.

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California (Map VMP-1). The Project occupies federal lands within the SQF, administered by the Forest Service.

4.0 PROJECT-RELATED VEGETATION MANAGEMENT

Vegetation management is implemented at Project facilities as necessary to control vegetation that may affect access, functionality of facilities, or worker / public health and safety. In addition, vegetation management is implemented to maintain compliance with fire prevention and fuels management requirements for defensible space. In general, vegetation management activities occur during the spring and early summer to avoid work during periods of high-fire danger. Vegetation management includes trimming by hand, removal of hazard trees, and herbicide application.

4.1 HAND TRIMMING

Hand trimming vegetation includes trimming grasses and forbs with a string trimmer and trimming and/or removing shrubs and trees with a chainsaw, other handheld saw, or pruners. These activities are implemented on an as-needed basis. Hand trimming generally occurs in the following areas:

- Within 10 feet around the perimeter of the dam
- Within 10 feet on either side of exposed water conveyance system features
- Within and up to 5 feet around the forebay perimeter fence
- Within and up to 100 feet around the powerhouse and switchyard and within and up to 30 feet around the forebay operations area
- Within 15 feet on either side of communication and power lines

¹ Under the California Environmental Quality Act, special-status plants are defined to include those species identified in the California Native Plant Society California Rare Plant Rank (CRPR) system as rare, threatened, or endangered plants in California. This includes 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).
- 2B (rare, threatened, or endangered in California, but common elsewhere).

- Within 10 feet on either side of access roads
- Within 5 feet on either side of access trails

4.2 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 with permission from the Forest Service. Removal is conducted with a chainsaw, handheld saw, and/or other equipment.

SCE follows company-wide vegetation management programs and regularly conducts inspections of Project facilities to assess and identify if there are any hazard trees that need to be remediated. Hazard trees that pose an immediate threat to facilities or personnel will be addressed as emergencies as soon as hazard tree crews can be dispatched. Such trees will be cut to remediate the emergency hazardous condition and SCE will notify the SQF in parallel. SCE will coordinate with the SQF about the disposal of logs and slash related to hazard tree removals to address any fuel loading concerns.

4.3 HERBICIDE APPLICATION

Herbicides are used to control weeds and vegetation encroachment and are applied using a small truck-mounted sprayer or backpack sprayer. As per ongoing standard procedure, SCE must obtain written approval from the Forest Service for any planned uses of pesticides. In consultation with a Certified Pesticide Use Advisor, SCE prepares a Pesticide Use Proposal (Forest Service Form FS-2100-0002) and submits it to the Forest Service for approval. The Pesticide Use Proposal identifies the products to be used, application methods, treatment locations, and timing of application. Once approved, a licensed vendor applies approved herbicides in accordance with conditions in the Pesticide Use Proposal.

5.0 SPECIAL-STATUS PLANT SPECIES AND NATIVE VEGETATION COMMUNITIES

SCE will avoid or minimize adverse effects to special-status plants and native vegetation communities during vegetation management activities to the extent possible within safety standards for clearance and safe access (see Section 5.1).

One special-status plant, rose-flowered larkspur (*Delphinium purpusii*), which is a Forest Service Species of Conservation Concern with a CRPR of 1B.3, was identified during the early season botanical surveys within the Project area. In addition, two habitats that are considered sensitive natural communities by the California Department of Fish and Wildlife (CDFW) were identified in the Project area. These are *Platanus racemosa* – *Quercus agrifolia* Woodland Alliance (California sycamore – Pacific live oak riparian woodlands) (G3 S3) and the *Salix lucida* ssp. *lasianдра* Woodland Alliance (shining willow groves) (G4 S3).

If additional special-status species are identified in the FERC Project boundary over the term of the new license, SCE will provide notification to applicable resource agencies (SQF and USFWS or CDFW, as applicable) and FERC.

5.1 PROTECTION MEASURES AND BEST MANAGEMENT PRACTICES

This section describes measures that could be implemented to avoid or minimize effects to special-status plant species during vegetation management activities. When work occurs where special-status botanical species described above are known to occur in the FERC Project boundary, SCE may include the following measures:

5.1.1 Environmental Training

Annual Environmental Training Program

SCE will continue to implement the Annual FERC Environmental Training Program (ETP), which requires SCE staff or contractors operating in the Project area to attend an Annual ETP that includes the following:

- Information on special-status plant species that are known to occur or may potentially occur in the vicinity of the Project area.
- Information on NNIPs that are known to occur or may potentially occur in the Project area.
- Applicable measures that have been identified (i.e., as part of the environmental screening process; refer to Section 5.1.2) to minimize or avoid effects to sensitive species or their habitats.

The training materials will be updated as necessary based on new special-status species in the FERC Project boundary and/or any new requirements or protection measures. SCE will incorporate the avoidance and protection measures discussed in the VMP into the FERC ETP.

Worker Environmental Awareness Program

Information about botanical protection measures prior to ground-disturbing activities is provided to SCE staff and contractors working at Project facilities. Typically, a project-specific Worker Environmental Awareness Program (WEAP) training is prepared for activities in areas where special-status species may be present or when working in sensitive habitats. The WEAP training sessions will vary as they are based on the activity and species potentially present; however, they all include a review of background material, permit conditions, instructions, and materials on how to avoid impacts on biological resources. Project-specific meetings may be conducted in the field on a job-specific or activity-specific basis to review appropriate maintenance protocols (avoidance and protection measures) in environmentally sensitive areas.

5.1.2 SCE Environmental Screening Process

SCE implements an environmental screening process for routine O&M activities and non-routine ground- or vegetation-disturbing activities. Routine O&M activities will typically have standardized measures added. Many non-routine O&M activities will go through an environmental screening and review process for a thorough review of potential resources that the activity may affect. SCE evaluates planned routine activities on an annual basis to ensure protection measures are adequate. Activities are vetted using a geographic information system that is regularly updated with inputs from public as well as external and internal database sources to account for any additional species or habitats that may be observed in the future in the FERC Project boundary. The screening process for routine O&M activities and for new or non-routine construction or maintenance is further described below.

Planned Operations and Maintenance

Planned routine O&M activities are screened annually to determine whether avoidance and protection measures are necessary to minimize potential effects to sensitive botanical resources or involve the potential for introduction or spread of NNIPs. Non-routine O&M activities will go through screening and a detailed site-specific review, when applicable. Typical avoidance and protection measures are reviewed during the Annual FERC ETP. Measures associated with planned O&M activities may include, but are not limited to:

- Consultation with the Forest Service during the Annual Consultation Meeting.
- Annual review of the list of Endangered Species Act and other sensitive botanical resources.
- Limiting vegetation management activities to defined work areas, and avoiding work within sensitive habitats (e.g., riparian habitats), to the degree possible.
- Avoidance buffers or seasonal restrictions for special-status plants: avoiding vegetation removal within known populations or conducting O&M activities outside of the emergence period (post-senescence or pre-emergence) to avoid disturbance to reproductive life cycle and seed dispersal.
- Topsoil salvage and replacement to preserve existing native seedbank when new ground disturbance is needed for O&M.
- Implementation of prevention strategies described in Section 6.1 to minimize the potential for the introduction or spread of NNIPs.
- Herbicide applications will be conducted consistent with a Forest Service approved Pesticide Use Proposal and all associated best management practices.

Other measures may also be developed, as needed, based on the specific activity or resource, or in consultation with resource agencies (refer to Section 7).

Major Construction

At this time, no planned new or major construction is anticipated; however, over the term of the new license, such construction efforts may occur (e.g., new structures, relocating a section of Project road, or major culvert upgrade, etc.) that have the potential to directly affect special-status plants and/or their habitat. These projects may be subject to separate, additional environmental review, to be determined on a case-by-case basis.

6.0 NON-NATIVE INVASIVE PLANTS

Five target NNIPs were located across the Project area during botanical surveys conducted in 2024 and 2025. Three of these species have a California Invasive Plant Council (Cal-IPC) rating of high and include red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*) and Scotch thistle (*Onopordum acanthium*) (Cal-IPC 2024). The other two Target NNIPs have a Cal-IPC rating of limited and include rabbit foot grass (*Polypogon monspeliensis*) and common mullein (*Verbascum thapsus*) (Cal-IPC 2024).

Other common NNIPs found within the Project area include slim oat (*Avena barbata*), black mustard (*Brassica nigra*), summer mustard (*Hirschfeldia incana*), ripgut brome (*Bromus diandrus*), red gum (*Eucalyptus camaldulensis*), indian tobacco (*Nicotiana glauca*), English plantain (*Plantago lanceolata*), castor (*Ricinus communis*), and hedge parsley (*Torilis arvensis*).

Refer to Table VMP-1 for a list of all plants observed during surveys conducted in 2024 and 2025, including Cal-IPC ratings for NNIPs.

6.1 PREVENTION STRATEGIES FOR NON-NATIVE INVASIVE PLANT SPECIES

Taking precautions in normal O&M activities can halt or slow the establishment and spread of NNIPs in the Project area. General guidelines for controlling the introduction and spread of NNIPs in the Project area are discussed below.

6.1.1 Equipment And Vehicle Cleaning

SCE field vehicles and equipment previously used on unpaved (e.g., native) surfaces outside of the watershed will be cleaned before entering the Project area. SCE will wash each vehicle/equipment with power or high-pressure washers to remove soil, seeds, vegetation, or other seed-bearing material before the equipment enters the Project area. SCE vehicles traveling through NNIPs within the watershed will be cleaned as soon as practicable after leaving the infested area. Following washing of the vehicle/equipment, SCE personnel will confirm through visual inspection that any potentially contaminated material has been removed.

6.1.2 Weed-free Straw

SCE will use only certified weed-free straw when mulch or other straw products (such as straw wattles) are required for erosion control. If certified weed-free straw is not available, rice straw or another biodegradable and weed-free alternative will be substituted.

6.1.3 Revegetation

Revegetation may be required to prevent the establishment of NNIPs in areas that have been cleared or are subject to larger areas of ground disturbance. Revegetation methods and plant pallets are site-specific and could require preparation of a revegetation plan or proposed plant palette to identify types of plants to be used and the appropriate method and time of planting. Only native species seed mixes or plant palettes will be used. SCE will consult with the Forest Service before implementation of revegetation efforts.

6.2 MEASURES FOR CONTROL OF NON-NATIVE INVASIVE PLANTS

This section describes measures SCE may employ to control NNIPs. Examples of some best management practices include:

- As part of SCE's routine O&M of the Project, known NNIP populations will be monitored as feasible to review population extent, and/or treatment needs. Recommended treatment methods to control these populations will be developed in consultation with the SQF during the Annual Consultation Meeting (Section 7).
- Locations with known NNIP populations requiring treatment (by SCE, based on consultation with SQF) (see Section 7), will be monitored within 1 year following treatment to determine the effectiveness of the treatment and, if needed, recommendations for additional treatment.

6.3 TREATMENT OF NEW AND ESTABLISHED NON-NATIVE INVASIVE PLANT INFESTATIONS

Prescriptions and implementation schedules for treatment of new and established NNIP infestations will be developed in consultation with the SQF. Existing data for known NNIP populations will be discussed as part of the Annual Consultation Meeting between SCE and SQF (see Section 7). SCE will provide a recommendation for NNIP treatment methods and timing on a site-specific basis, considering the species present (including species present in adjacent areas outside of the FERC Project boundary), infestation levels feasibility of treatment, lessons learned, and local conditions.

7.0 CONSULTATION

Over the term of the new license, SCE will participate in an Annual Consultation Meeting with the Forest Service to discuss Project O&M activities that were implemented the previous year, including any emergency repairs, and identify activities planned for the next calendar year. The goals of this meeting are to share information, planned maintenance activities, and proposed avoidance and minimization measures.

Over the term of the new license, if any existing or newly federally listed threatened, endangered, or sensitive species other than those described in the Plan are documented within the FERC Project boundary, SCE will notify applicable resource agencies (SQF and USFWS or CDFW, as applicable) and FERC. SCE would then consult about the need for any additional protection measures to address new species.

8.0 REFERENCES

Cal-IPC (California Invasive Plant Council). 2024. The Cal-IPC Inventory. Accessed: June 2024. Retrieved from: <https://www.cal-ipc.org/plants/inventory/>

Forest Service (United States Forest Service). 2023. Land Management Plan for the Sequoia National Forests: Fresno, Kern, and Tulare Counties, California. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Sequoia National Forest. R5-MB-330A. Accessed: August 25, 2023. Retrieved from: <https://www.fs.usda.gov/project/?project=3375>.

USFWS (United States Fish and Wildlife Service). 2024. Information for Planning and Consultation (IPaC): online project planning tool. Accessed: June 2024. Retrieved from: <https://ipac.ecosphere.fws.gov/>

TABLES

Table VMP-1. Comprehensive List of Plants Identified During 2024/2025 Botanical Surveys

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Special Status Species</i>				
<i>Delphinium purpusii</i>	rose-flowered larkspur	Native	Ranunculaceae	California Rare Plant Rank 1B.3
<i>Target Non-native Invasive Plant Species</i>				
<i>Bromus rubens</i>	Red brome	Non-native	Poaceae	Cal-IPC rating: high
<i>Bromus tectorum</i>	Cheatgrass	Non-native	Poaceae	Cal-IPC rating: high
<i>Onopordum acanthium</i>	Scotch thistle	Non-native	Asteraceae	Cal-IPC rating: high
<i>Polypogon monspeliensis</i>	Rabbit foot grass	Non-native	Poaceae	Cal-IPC rating: limited
<i>Verbascum thapsus</i>	Common mullein	Non-native	Scrophulariaceae	Cal-IPC rating: limited
<i>All Other Plant Species</i>				
<i>Achillea millefolium</i>	Yarrow	Native	Asteraceae	—
<i>Achyraea mollis</i>	Blow wives	Native	Asteraceae	—
<i>Acmipson procumbens</i> var. <i>procumbens</i>	Silky California broom	Native	Fabaceae	—
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish lotus	Native	Fabaceae	—
<i>Acmispon brachycarpus</i>	Short podded lotus	Native	Fabaceae	—
<i>Aesculus californica</i>	California buckeye	Native	Sapindaceae	—
<i>Allium peninsulare</i>	Mexicali onion	Native	Alliaceae	—
<i>Alnus rhombifolia</i>	White alder	Native	Betulaceae	—
<i>Amsinckia intermedia</i>	Common fiddleneck	Native	Boraginaceae	—
<i>Anemopsis californica</i>	Yerba mansa	Native	Saururaceae	—
<i>Aphyllon corymbosum</i>	Flat topped broom rape	Native	Orobanchaceae	—
<i>Artemisia douglasiana</i>	California mugwort	Native	Asteraceae	—
<i>Asclepias californica</i>	California milkweed	Native	Apocynaceae	—

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Asclepias fascicularis</i>	narrow leaf milkweed	Native	Apocynaceae	–
<i>Avena barbata</i>	Slim oat	Non-native	Poaceae	Cal-IPC rating: Moderate
<i>Baccharis salicifolia</i>	Mule fat	Native	Asteraceae	–
<i>Balsamorhiza deltoidei</i>	Deltoid balsam root	Native	Asteraceae	–
<i>Boechera arcutata</i>	Arching rockcress	Native	Brassicaceae	–
<i>Bowlesia incana</i>	Bowlesia	Native	Apiaceae	–
<i>Brassica nigra</i>	Black mustard	Non-native	Brassicaceae	Cal-IPC rating: High
<i>Brickellia californica</i>	California brickellia	Native	Asteraceae	–
<i>Brodiaea elegans</i>	Harvest brodiaea	Native	Themidaceae	–
<i>Bromus diandrus</i>	Ripgut brome	Non-native	Poaceae	Cal-IPC rating: Moderate
<i>Calandrinia menziesii</i>	Red maids	Native	Montiaceae	–
<i>Calandrinia menziesii</i>	Calandrinia	Native	Montiaceae	–
<i>Calochortus venustus</i>	Butterfly mariposa lily	Native	Liliaceae	–
<i>Calystegia longipes</i>	Piute morning glory	Native	Convolvulaceae	–
<i>Camissonia contorta</i>	Contorted sun cup	Native	Onagraceae	–
<i>Capsella bursa-pastoris</i>	Shepards purse	Native	Brassicaceae	–
<i>Castilleja attenuata</i>	Narrow-leaved owl's clover	Native	Fabaceae	–
<i>Castilleja exerta</i>	Owl's clover	Native	Fabaceae	–
<i>Castilleja subinclusa</i> ssp. <i>subinclusa</i>	Long leaf paintbrush	Native	Fabaceae	–
<i>Caulanthus coulteri</i> var. <i>coulteri</i>	Coulter's jewel flower	Native	Brassicaceae	–
<i>Celtis reticulata</i>	Western hackberry	Native	Cannabaceae	–
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	Common yellow chaenactis	Native	Asteraceae	–
<i>Chenopodium californicum</i>	California goosefoot	Native	Chenopodiaceae	–
<i>Clarkia unguolata</i>	Woodland clarkia	Native	Orobanchaceae	–

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Claytonia parviflora</i>	Narrow-leaved miner's lettuce	Native	Montiaceae	—
<i>Claytonia perfoliate</i>	Miner's lettuce	Native	Montiaceae	—
<i>Collinsia concolor</i>	Chinese houses	Native	Plantaginaceae	—
<i>Collinsia heterophylla</i>	Purple Chinese houses	Native	Plantaginaceae	—
<i>Collinsia tinctora</i>	Tincture plant	Native	Plantaginaceae	—
<i>Croton setiger</i>	Turkey-mullein	Native	Euphorbiaceae	—
<i>Cryptantha flaccida</i>	Beaked cryptantha	Native	Boraginaceae	—
<i>Cryptantha muricata</i> var. <i>muricata</i>	Showy prickly nut cryptantha	Native	Boraginaceae	—
<i>Cucurbita palmata</i>	Coyote melon	Native	Cucurbitaceae	—
<i>Cylindropuntia echinocarpa</i>	Silver cholla	Native	Cactaceae	—
<i>Cyperus esculentus</i>	Nut sedge	Native	Cyperaceae	—
<i>Datura wrightii</i>	Sacred datura	Native	Solanaceae	—
<i>Delphinium graciletum</i>	Meadow larkspur	Native	Ranunculaceae	—
<i>Delphinium gypsonphilum</i>	Gypsum loving larkspur	Native	Ranunculaceae	—
<i>Diplacus grandiflorus</i>	Sticky monkeyflower	Native	Phrymaceae	—
<i>Dipterostemon capitatus</i>	Blue dicks	Native	Themidaceae	—
<i>Dudleya cymosa</i>	Rock lettuce	Native	Crassulaceae	—
<i>Encelia actoni</i>	Acton brittlebush	Native	Asteraceae	—
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Willow herb	Native	Onagraceae	—
<i>Epilobium canum</i> ssp. <i>canum</i>	California fuchsia	Native	Onagraceae	—
<i>Eriogonum roseum</i>	Wand buckwheat	Native	Polygonaceae	—
<i>Eriophyllum lanatum</i>	Wooly sunflower	Native	Asteraceae	—
<i>Erysimum capitatum</i> var. <i>capitatum</i>	Sand dune wallflower	Native	Onagraceae	—
<i>Erythranthe guttata</i>	Seep spring monkeyflower	Native	Phrymaceae	—
<i>Erythranthe cardinalis</i>	Cardinal monkey flower	Native	Phrymaceae	—

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Erythranthe moschata</i>	Musk monkeyflower	Native	Phrymaceae	–
<i>Eschscholzia caespitosa</i>	Tufted poppy	Native	Papaveraceae	–
<i>Eschscholzia californica</i>	California poppy	Native	Papaveraceae	–
<i>Eschscholzia lobbii</i>	Frying pan poppy	Native	Papaveraceae	–
<i>Eucalyptus camaldulensis</i>	Red gum	Non-native	Myrtaceae	Cal-IPC rating: Limited
<i>Euthamia occidentalis</i>	Western goldenrod	Native	Asteraceae	–
<i>Fraxinus latifolia</i>	Oregon ash	Native	Oleaceae	–
<i>Gallium aparine</i>	Common bedstraw	Native	Apiaceae	–
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	Ball gilia	Native	Polemoniaceae	–
<i>Gilia tricolor</i> ssp. <i>diffus</i>	Birds eye gilia	Native	Polemoniaceae	–
<i>Gnaphalium pulstre</i>	Lowland cudweed	Native	Asteraceae	–
<i>Helenium puberulum</i>	Sneezeweed	Native	Asteraceae	–
<i>Heliotropium curassavicum</i> ssp. <i>oculatum</i>	Alkali heliotrope	Native	Heliotropiaceae	–
<i>Hesperoyucca whipplei</i>	Chaparral yucca	Native	Asparagaceae	–
<i>Hieracium horridum</i>	Shaggy hawkweed	Native	Asteraceae	–
<i>Juncus balticus</i>	Baltic rush	Native	Juncaceae	–
<i>Juncus bufonius</i>	Common toad rush	Native	Juncaceae	–
<i>Lactuca serriola</i>	Prickly lettuce	Non-native	Asteraceae	–
<i>Lasthenia debilis</i>	Greene's goldfields	Native	Asteraceae	–
<i>Leptosiphon bicolor</i>	True babystars	Native	Polemoniaceae	–
<i>Leptosiphon ciliates</i>	Whiskerbrush	Native	Polemoniaceae	–
<i>Leptosiphon monatus</i>	Mustang clover	Native	Polemoniaceae	–
<i>Lithophragma affine</i>	Common woodland star	Native	Saxifragaceae	–
<i>Lithophragma heterophyllum</i>	Woodland star	Native	Saxifragaceae	–

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Lupinus albifrons</i> var. <i>albifrons</i>	Silver bush lupine	Native	Fabaceae	—
<i>Lupinus microcarpus</i>	Chick lupine	Native	Fabaceae	—
<i>Marah horrida</i>	Sierra man-root	Native	Cucurbitaceae	—
<i>Matricaria discoidea</i>	Pineappleweed	Native	Asteraceae	—
<i>Melilotus albus</i>	White sweetclover	Non-native	Fabaceae	—
<i>Melilotus indicus</i>	Annual yellow sweetclover	Non-native	Fabaceae	—
<i>Micranthes californica</i>	California saxifrage	Native	Saxifragaceae	—
<i>Mirabilis laevis</i> var. <i>cedrosensis</i>	California four O' Clock	Native	Nyctaginaceae	—
<i>Monardella odoratissima</i>	Mountain monardella	Native	Lamiaceae	—
<i>Nastrium officinale</i>	Watercress	Native	Brassicaceae	—
<i>Nemophila pulchilla</i> var. <i>fremontii</i>	Fremont's nemophila	Native	Boraginaceae	—
<i>Nicotiana glauca</i>	Indian tobacco	Non-native	Solanaceae	Cal-IPC rating: Moderate
<i>Oenothera californica</i>	California primrose	Native	Onagraceae	—
<i>Oenothera californicum</i>	California evening primrose	Native	Onagraceae	—
<i>Oenothera deltoides</i> ssp. <i>cognata</i>	Desert lantern	Native	Onagraceae	—
<i>Opuntia basilaris</i>	Beavertail cactus	Native	Cactaceae	—
<i>Orobanche uniflora</i>	Single-leaved broomrape	Native	Orobanchaceae	—
<i>Oxalis corniculata</i>	Yellow sorrel	Non-native	Oxalidaceae	—
<i>Papaver heterophyllum</i>	Wind poppy	Native	Papaveraceae	—
<i>Pellaea andromedifolia</i>	Coffee fern	Native	Pteridaceae	—
<i>Pellaea mucronata</i> var. <i>californica</i>	Bird's foot fern	Native	Pteridaceae	—
<i>Penstemon grinnelli</i> var. <i>scrophulinooides</i>	Grinnell's beardtongue	Native	Plantaginaceae	—
<i>Phacelia cicutaria</i> var. <i>cicutaria</i>	Caterpillar phacelia	Native	Boraginaceae	—
<i>Phacelia distens</i>	Common phacelia	Native	Boraginaceae	—

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Phacelia egea</i>	Rock phacelia	Native	Boraginaceae	–
<i>Pholistoma auritum</i> var. <i>auritum</i>	Blue fiesta flower	Native	Hydrophyllaceae	–
<i>Pinus sabiniana</i>	Grey pine	Native	Pinaceae	–
<i>Pinus sabiniana</i>	Gray pine	Native	Pinaceae	–
<i>Plagiobothrys tenellus</i>	Slender popcorn flower	Native	Boraginaceae	–
<i>Plantago lanceolata</i>	English plantain	Non-native	Plantaginaceae	Cal-IPC rating: Limited
<i>Plantago major</i>	Common plantain	Non-native	Plantaginaceae	–
<i>Platanus racemosa</i>	California sycamore	Native	Platanaceae	–
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	Native	Salicaceae	–
<i>Pseudognaphalium californicum</i>	California cudweed	Native	Asteraceae	–
<i>Punica granatum</i>	Pomegranate	Non-native	Lythraceae	–
<i>Quercas douglasii</i>	Blue oak	Native	Fagaceae	–
<i>Quercus agrifolia</i>	Live oak	Native	Fagaceae	–
<i>Quercus wislizeni</i>	Interior live oak	Native	Fagaceae	–
<i>Rafinesquia californica</i>	California chicory	Native	Asteraceae	–
<i>Ribes californicum</i>	California gooseberry	Native	Grossulariaceae	–
<i>Ribes roezlii</i>	Sierra gooseberry	Native	Grossulariaceae	–
<i>Ricinus communis</i>	Castor	Non-native	Euphorbiaceae	Cal-IPC rating: Limited
<i>Rorippa curvisiliqua</i>	Curvepod yellowcress	Native	Brassicaceae	–
<i>Rubus californica</i>	California blackberry	Native	Rosaceae	–
<i>Rumex conglomeratus</i>	Green dock	Non-native	Polygonaceae	–
<i>Salix exigua</i>	Sandbar willow	Native	Salicaceae	–
<i>Salvia columbariae</i>	Chia	Native	Lamiaceae	–
<i>Schoenoplectus californicus</i>	Bullrush	Native	Cyperaceae	–
<i>Scrophularia californica</i>	California bee plant	Native	Scrophulariaceae	–

Scientific Name	Common Name	Native/Non-Native	Family	Status
<i>Solanum xanti</i>	Purple nightshade	Native	Solanaceae	—
<i>Sonchus asper</i>	Spiny sow thistle	Non-native	Asteraceae	—
<i>Stellaria media</i>	Chickweed	Non-native	Caryophyllaceae	—
<i>Stephanomeria pauciflora</i>	Wire lettuce	Native	Asteraceae	—
<i>Thalictrum fendleri</i>	Meadow rue	Native	Ranunculaceae	—
<i>Thyanocarpus curvipes</i>	Lace pods	Native	Brassicaceae	—
<i>Torilis arvensis</i>	Hedge parsley	Non-native	Apiaceae	Cal-IPC rating: Moderate
<i>Toxicodendron diversilobum</i>	Poison oak	Native	Anacardiaceae	—
<i>Trichostema lanceolatum</i>	Vinegarweed	Native	Lamiaceae	—
<i>Trifolium albopurpureum</i>	Indian clover	Native	Fabaceae	—
<i>Trifolium gracile</i>	Pin point clover	Native	Fabaceae	—
<i>Trifolium oliganthum</i>	Tomcat clover	Native	Fabaceae	—
<i>Triteleia ixioides</i> ssp. <i>scabra</i>	Foothill triteleia	Native	Themidaceae	—
<i>Triteleia laxa</i>	Ithuriel spears	Native	Themidaceae	—
<i>Uropappus lindleyi</i>	Silver puffs	Native	Asteraceae	—
<i>Urtica dioica</i>	Stinging nettle	Native	Urticaceae	—
<i>Verbascum blattaria</i>	Moth mullein	Non-native	Scrophulariaceae	—
<i>Veronica anagallis-aquatica</i>	Water speedwell	Non-native	Plantaginaceae	—
<i>Xanthium strumarium</i>	Cocklebur	Native	Asteraceae	—

Key: Cal-IPC = California Invasive Plant Council

Notes: ^a Calflora. 2024. The Calflora Database [a non-profit organization]. Berkeley, California. Accessed: June 2024. Retrieved from: <https://www.calflora.org/>

^b CNDDDB, 2024

^c Status:

Federal

— = No federal status

State

SE = California listed as endangered

SR = California listed as rare

— = No California status

CRPR List Ranks

List 1B = Plants rare, threatened, or endangered in California and elsewhere

List 2B = Plants rare, threatened, or endangered in California, but more common elsewhere

List 3 = More information needed about this plant, a review list

List 4 = Plants of limited distribution, a watch list

CRPR Threat Ranks

.2 = Fairly threatened in California (moderate degree/immediacy of threat)

.3 = Not very threatened in California (low degree/immediacy of threat or no current threat known)

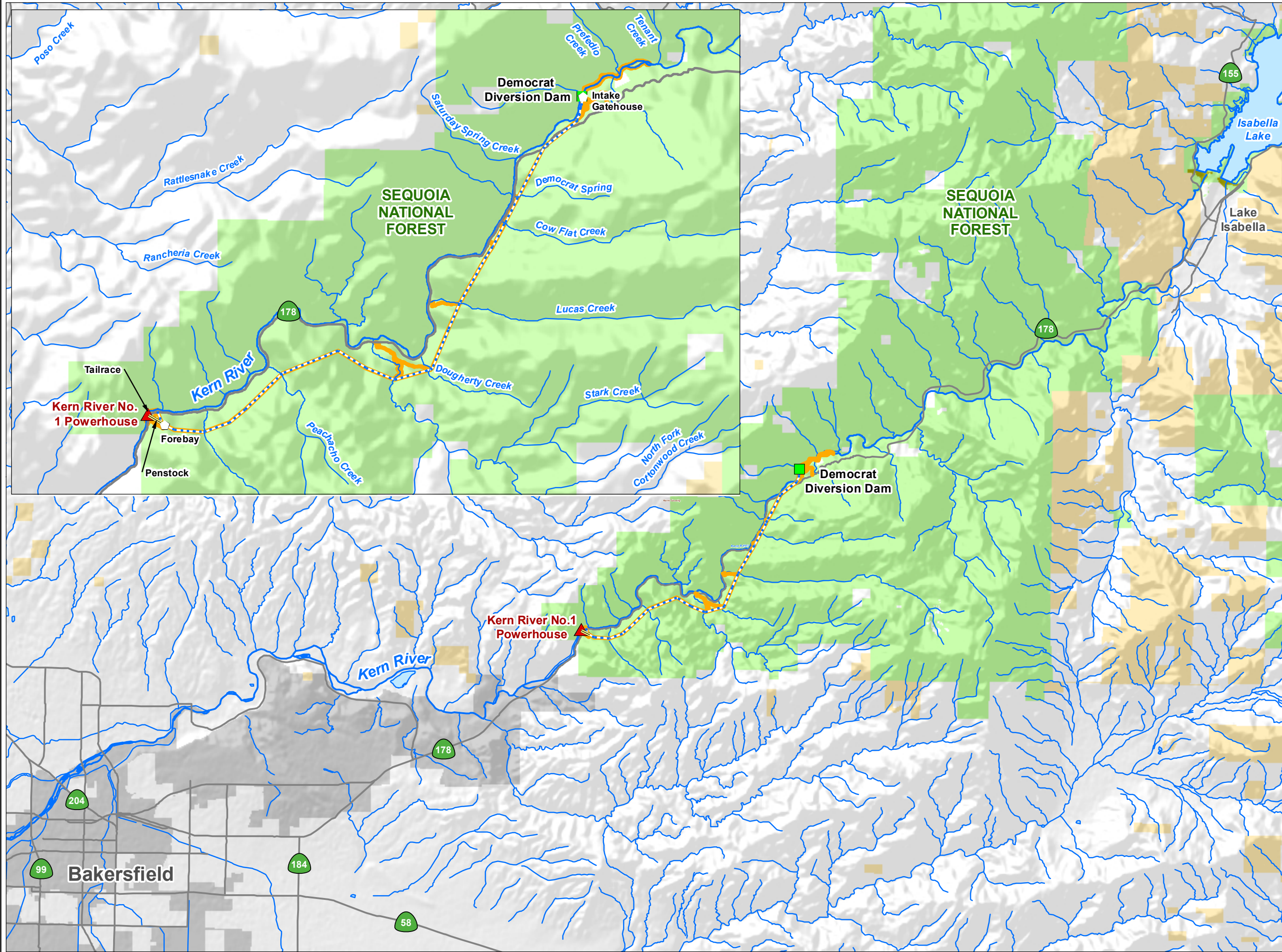
Cal-IPC Rating Definitions

High = These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate-to-high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate = These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate-to-high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited = These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low-to-moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

MAPS



Facilities

Dam

Powerhouse

Water Conveyance Feature

Flowline

Penstock

FERC Boundary

Other Features

Highway

Watercourse

Water Body

Land Jurisdiction*

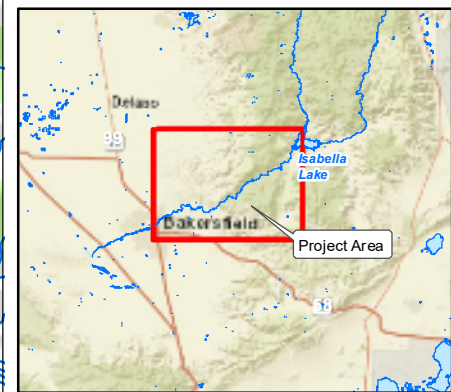
U.S. Forest Service

U.S. Bureau of Land Management

U.S. Army Corps of Engineers

Private (Blank)

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA

EDISON

Energy for What's AheadSM

Kern River No. 1 Hydroelectric Project

FERC Project No. 1930

Map VMP-1

Project Vicinity and Land Jurisdiction

0

0.5

1

2

Miles

Projection: UTM Zone 11

Datum: NAD 83

Date: 10/9/2025

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DRAFT
WILDLIFE RESOURCES MANAGEMENT
PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
2.1 Regulatory Requirement.....	1
3.0 Project Location.....	2
4.0 Routine Operations and Maintenance	2
5.0 Protection Measures and Best Management Practices	2
5.1 Environmental Training	2
5.1.1 Annual Environmental Training Program	2
5.1.2 Worker Environmental Awareness Program	3
5.2 SCE Environmental Screening Process.....	3
5.2.1 Planned Operations and Maintenance.....	3
5.2.2 Major Construction.....	4
5.3 SCE Avian Protection Program.....	4
5.4 Wildlife Mortality Observations.....	5
5.5 Protection of Kern Canyon and Relictual Slender Salamander.....	5
5.6 Protection of Northwestern Pond Turtle	6
6.0 Consultation.....	7
7.0 References	8

LIST OF TABLES

Table WRMP-1. Special-Status Wildlife Known to Occur or Potentially Occurring in the Vicinity of the Kern River No. 1 Project.....	10
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LIST OF MAPS

Map WRMP-1. Project Vicinity Map.....	21
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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
ETP	Environmental Training Program
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
O&M	operations and maintenance
Project	Kern River No. 1 Hydroelectric Project
SCE	Southern California Edison
SQF	Sequoia National Forest
WRMP	Wildlife Resources Management Plan
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Wildlife Resources Management Plan (WRMP) for the Kern River No. 1 Hydroelectric Project (Project). The WRMP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

The WRMP includes a description of protection measures to avoid and minimize the potential for adverse effects on wildlife resources, during Project routine operations and maintenance (O&M) activities. SCE will coordinate the efforts required under this draft WRMP with other license obligations as necessary.

2.0 PURPOSE AND OBJECTIVES

The purpose of the WRMP is to describe measures for the protection of special-status wildlife species and their habitats, and to avoid and minimize adverse effects of routine Project O&M consistent with the federal Endangered Species Act (ESA) and California ESA (CESA) and other regulatory requirements of the United States Fish and Wildlife Service (USFWS), United States Forest Service (Forest Service), and California Department of Fish and Wildlife (CDFW). The objectives of this Plan include:

- Prevention of disturbance/impacts to ESA and CESA species.
- Prevention of disturbance/impacts to Forest Service Species of Conservation Concern.
- Prevention of disturbance/impacts to other special-status species, such as California Species of Special Concern.

The maintenance performed under this WRMP will be consistent with the requirements of the Historic Properties Management Plan, Project Access Roads and Trails Management Plan, Sediment Management Plan, and Vegetation Management Plan, as applicable.

2.1 REGULATORY REQUIREMENT

The WRMP focuses on the wildlife species of management concern that are known to occur or potentially occur in the FERC Project boundary. Wildlife species of management concern may include:

- ESA Listed, Proposed, and Candidate species and associated Critical Habitat
- CESA species
- CDFW Species of Special Concern
- Forest Service Species of Conservation Concern

- Migratory birds and their parts, nests, or eggs
- Raptors and nesting birds

Based on field surveys and direct observations in 2024 and 2025, 23 species were determined to be present within the FERC Project boundary, and 21 species were determined to potentially occur based on habitat requirements. Refer to Table WRMP-1 for a comprehensive list of species known or potentially occurring in the Project area.

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California (Map WRMP-1). The Project occupies federal lands within the Sequoia National Forest (SQF), administered by the Forest Service.

4.0 ROUTINE OPERATIONS AND MAINTENANCE

Routine O&M activities include powerhouse inspection and maintenance; water conveyance system maintenance; dam inspections, testing, and maintenance; sediment management; woody debris removal; pest management; road maintenance; trail maintenance; vegetation management (including hand trimming, hazard tree removal, and herbicide application); and power and communication line maintenance. These O&M activities typically occur within previously disturbed areas, or in areas that are regularly maintained and cleared of vegetation surrounding the Project facilities.

5.0 PROTECTION MEASURES AND BEST MANAGEMENT PRACTICES

Several protection measures for wildlife are included in SCE Environmental Department's existing programs to minimize risk of environmental disturbance to special-status wildlife and their habitats, including nesting birds. Environmental programs and measures that will be implemented over the term of the license are described below.

5.1 ENVIRONMENTAL TRAINING

5.1.1 Annual Environmental Training Program

SCE will continue to implement the Annual FERC Environmental Training Program (ETP), which requires SCE staff or contractors operating in the Project area to attend an Annual ETP that includes the following:

- Information on special-status wildlife species that are known to occur or may potentially occur in the Project area.
- Applicable measures that have been identified (i.e., as part of the environmental screening process; refer to Section 5.2) to minimize or avoid effects to sensitive species or their habitats.

The training materials will be updated as necessary based on new special-status species in the FERC Project boundary and/or any new requirements or protection measures. SCE will incorporate the avoidance and protection measures discussed in the WRMP into the FERC ETP.

5.1.2 Worker Environmental Awareness Program

Information about wildlife protection measures prior to ground-disturbing activities is provided to SCE staff and contractors working at Project facilities. Typically, a project-specific Worker Environmental Awareness Program (WEAP) training is prepared for activities in areas where special-status species may be present or when working in sensitive habitats. The WEAP training sessions will vary as they are based on the activity and species potentially present; however, they all include a review of background material, permit conditions, instructions, and materials on how to avoid impacts on biological resources. Project-specific meetings may be conducted in the field on a job-specific or activity-specific basis to review appropriate maintenance protocols (avoidance and protection measures) in environmentally sensitive areas.

5.2 SCE ENVIRONMENTAL SCREENING PROCESS

SCE implements an environmental screening process for routine O&M activities and non-routine ground- or vegetation-disturbing activities. Routine O&M activities will typically have standardized measures added. Many non-routine O&M activities will go through an environmental screening and review process for a thorough review of potential resources that the activity may affect. SCE evaluates planned routine activities on an annual basis to ensure protection measures are adequate. Activities are vetted using a geographic information system that is regularly updated with inputs from public as well as external and internal database sources to account for any additional species or habitats that may be observed in the future in the FERC Project boundary. The screening process for routine O&M activities and for new or non-routine construction or maintenance activities is further described below.

5.2.1 Planned Operations and Maintenance

Planned routine O&M activities are screened annually to determine whether avoidance and protection measures are necessary to minimize potential effects to sensitive wildlife resources. Non-routine O&M activities will go through screening and a detailed site-specific review, when applicable. Typical avoidance and protection measures are reviewed during the Annual FERC ETP. Measures associated with planned O&M activities may include, but are not limited to:

- Consultation with the Forest Service during the Annual Consultation Meeting.
- Annual review of the list of ESA and other special-status wildlife species.
- Limiting O&M activities to defined work areas.

- Implementation of measures for the protection of migratory birds, consistent with the Avian Protection Program (refer to Section 5.3).
- Implementation of resource-specific protection measures, where applicable, including:
 - Defining work areas to avoid sensitive environmental resources, including establishing appropriate protective buffers.
 - Establishing limited operating periods.
 - Pre-activity surveys and/or activity monitoring when resources are known to be present.
 - Avoidance of milkweed populations which represent breeding habitat for monarch butterfly, when possible.
 - Other species-specific protection measures (refer to Sections 5.5 and 5.6).
- Implementation of herbicide applications consistent with approved Pesticide Use Proposals and all associated best management practices.

Other measures may also be developed, as needed, based on the specific activity or resource, or on consultation with resource agencies (refer to Section 6).

5.2.2 Major Construction

At this time, no planned new major construction is anticipated; however, over the term of the new license, such construction efforts may occur (e.g., new structures, relocating a section of Project road, or major culvert upgrade, etc.) that have the potential to directly affect wildlife and/or their habitat. These projects may be subject to separate, additional environmental review, to be determined on a case-by-case basis.

5.3 SCE AVIAN PROTECTION PROGRAM

SCE implements an Avian Protection Program that integrates USFWS guidelines for sensitive raptors, as well as Avian Power Line Interaction Committee guidelines for raptor-safe transmission and power line configurations. The Program includes:

- Employee training
- Construction standards for new or replacement lines and poles/structures
- Nesting bird guidelines (e.g., nest buffers and limited operating periods for small-scale construction activities and helicopter use)
- Reporting program for avian nests

- Avian mortality reporting and mortality reduction measures
- Quality control (assessments and audits) performed to ensure data integrity and compliance with the Program

5.4 WILDLIFE MORTALITY OBSERVATIONS

SCE also has a protocol for reporting observations of wildlife mortalities or other incidents, which is included in the Annual FERC ETP. Should a special-status wildlife or avian species mortality be documented within the FERC Project boundary, SCE will provide notification to the Forest Service and other appropriate agencies upon report of discovery of the mortality.

5.5 PROTECTION OF KERN CANYON AND RELICTUAL SLENDER SALAMANDER

Two observations of the federally proposed threatened Kern Canyon slender salamander (*Batrachoseps simatus*) were observed during wildlife studies conducted as part of Project relicensing. In addition, there is proposed Critical Habitat and suitable habitat both for Kern Canyon and relictual slender salamanders (*Batrachoseps relictus*; Proposed Endangered) in the Project area. Project O&M activities have the potential to affect these species; therefore, the following specific measures would be implemented to minimize the potential for effects to these species.

As described in Section 5.2, planned O&M activities will be reviewed to determine appropriate avoidance and protection measures that may be required considering the presence of sensitive resources. When planned O&M activities occur in suitable habitat for special-status slender salamander species, SCE may include one or more of the following avoidance measures listed below, as appropriate. These measures would be reviewed with employees and contractors as part of the Annual FERC ETP.

- Limit O&M activities to defined work areas.
- Conduct O&M activities in a manner that minimizes disturbance of suitable habitat¹ such as minimizing (and avoiding wherever feasible) off-road vehicle travel, minimizing ground disturbance, and implementing the least ground disturbing approach to the work.
- Retain cover objects (e.g., downed wood), to the degree possible, within suitable habitat for sensitive amphibians (e.g., Kern Canyon slender salamander, relictual slender salamander, and yellow-blotched salamander).
- Within occupied and suitable habitat, O&M work activities shall, to the extent feasible, be conducted when there is no predicted rain in the forecast.

¹ Defined as areas determined during wildlife studies as supporting habitat elements necessary for all life stages of the species and/or physical and biological features necessary for the conservation of the species.

- Herbicide applications will be conducted consistent with a Forest Service approved Pesticide Use Proposal and all associated best management practices (e.g., no predicted rain during herbicide application and/or as consistent with label requirements).
- Major road repairs that require significant ground disturbance within suitable habitat for slender salamanders may require one or more of the following, as appropriate:
 - Work crews may attend a project-specific WEAP to discuss Kern Canyon and relictual slender salamander ecology, habitat, and required avoidance measures.
 - A qualified biologist may conduct a pre-activity survey to determine whether the species or suitable habitat features (e.g., burrows or downed wood piles) are present.
 - If a Kern Canyon or relictual slender salamander is observed during pre-activity surveys or during construction activities, the following will be implemented:
 - Work activities that could result in harm of slender salamanders will cease temporarily.
 - SCE's Environmental Department will be contacted and appropriate avoidance and protection measures developed and implemented. Measures may include but are not limited to moving the individual to the nearest suitable habitat or having a monitor present to ensure avoidance.

5.6 PROTECTION OF NORTHWESTERN POND TURTLE

Two observations of federally proposed threatened northwestern pond turtle (*Actinemys marmorata*) were recorded in the Democrat Dam Impoundment during visual encounter surveys conducted for the AQ 3 – Fish Population study conducted as part of Project relicensing. Suitable aquatic and upland habitat are present within the Project area. Project O&M activities have the potential to affect northwestern pond turtles; therefore, the following measures will be implemented to protect this species.

- As described in the Sediment Management Plan, implementation of the full sediment bypass procedure will be limited to between November 15 and March 14. This seasonal timing requirement would restrict full sediment bypass activities to periods when adult turtles are less active and overwintering hatchlings have either not yet emerged from upland nests, or if young-of-year hatchlings have already emerged, are less reliant on shallow water margin habitats.
- Herbicide applications will be conducted consistent with a Forest Service approved Pesticide Use Proposal and all associated best management practices.

- The following measures (described above) would further minimize the potential for effects to northwestern pond turtle:
 - An Annual FERC ETP will be conducted that includes information about special-status wildlife species that are known to occur or may potentially occur in the Project area (Section 5.1.1).
 - A WEAP will be conducted for ground-disturbing activities in areas where special-status species may be present or when working in sensitive habitats (Section 5.1.2).
 - An environmental screening process and associated measures, as applicable, will be implemented for O&M activities (Section 5.2.1). Specific measures for northwestern pond turtle could include:
 - If ground-disturbing activities, such as culvert replacements, are proposed within suitable habitat for northwestern pond turtle, a qualified biologist may conduct a pre-activity clearance survey.
 - If a northwestern pond turtle is observed during the pre-activity survey, or during construction activities, the following will be implemented:
 - Work activities that could result in harm of northwestern pond turtle will cease temporarily.
 - SCE's Environmental Department will be contacted and appropriate avoidance and protection measures developed and implemented. Measures may include but are not limited to moving the individual to the nearest suitable habitat or having a monitor present to ensure avoidance.

6.0 CONSULTATION

Over the term of the new license, SCE will participate in an Annual Consultation Meeting with the Forest Service to discuss Project O&M activities that were implemented the previous year, including any emergency repairs, and identify activities planned for the next calendar year. The goals of this meeting are to share information, planned maintenance activities, and proposed avoidance and minimization measures.

Over the term of the new license, if any existing or newly federally listed threatened, endangered, or sensitive species other than those described in the Plan are documented within the FERC Project boundary, SCE will notify applicable resource agencies (SQF and USFWS or CDFW, as applicable) and FERC. SCE would then consult about the need for any additional protection measures to address new species.

7.0 REFERENCES

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TABLES

Table WRMP-1. Special-Status Wildlife Known to Occur or Potentially Occurring in the Vicinity of the Kern River No. 1 Project.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
Known to Occur in the Study Area					
Terrestrial Invertebrates					
<i>Bombus crotchii</i> Crotch's bumble bee	–	–	CC	Found primarily in the Mediterranean region, Pacific Coast, and Western Desert of California. Inhabits grasslands and shrublands, requiring a hotter and drier environment than most other bumble bee species. Can be found nesting underground in abandoned rodent dens.	Known to Occur. Three individual bumble bees belonging to the genus <i>Bombus</i> were observed during wildlife surveys in conjunction with the TERR 2 TM (SCE 2025b). These individuals could not be identified down to a species level. The CNDDDB query yielded four records for this species within the study area (CNDDDB 2025): <ul style="list-style-type: none">A 2021 observation of one female was observed on Cow Flat Road, northwest of Cow Flat and about 0.5 mile east of Flume No. 2 Cow Flat Creek; andA 2023 observation of one female was observed along State Route 178 0.2 mile south of Kern River No. 1 Powerhouse;A 2025 observation of one female was observed along State Route 178 near Willow Spring Creek Road (also referred to as Democrat Dam Road); andA 2025 observation of one female was observed along State Route 178 about 0.3 mile southwest of Pechacho Creek.
<i>Danaus plexippus</i> monarch butterfly	FPT	–	–	Overwintering population in coastal California. In late-February or March, monarchs will disperse from wintering areas to interior California. Quality habitat includes milkweed (<i>Asclepias</i> spp.) which occur in short and tall grass prairies, livestock pastures, agricultural margins, roadsides, wetland and riparian areas, sandy areas, gardens, open forests, and woodlands.	Known to Occur. The host plant (milkweed species) was observed in the study area during the TERR 1 TM studies (SCE 2025a), This species was observed during studies for the TERR 2 TM (SCE 2025b), including: <ul style="list-style-type: none">One individual was observed on an island in the Democrat Dam Impoundment during the botanical surveys.One individual was observed along the north shore of the of the Democrat Dam Impoundment during the riparian surveys.
Amphibians					
<i>Batrachoseps simatus</i> Kern Canyon slender salamander	FPT	FSCC	CT	Found in north-facing slopes in narrow canyons shaded by foothill woodland and riparian areas along creeks. Found under rocks, fallen limbs and leaf litter. Endemic to the Kern River Canyon from 1,500 to 4,000 feet in elevation.	Known to occur. Two observations of a Kern Canyon slender salamander were recorded during studies for the TERR 2 TM near the Stark Creek Trail (SCE 2025b). One additional 2024 observation of this species was recorded south of the Kern River No. 1 Powerhouse during SCE surveys along the non-Project transmission line corridor (SCE 2025b). The CNDDDB query yielded nine additional records ranging from 1970 - 2010 for this species within the study area (CNDDDB 2025). Proposed Critical Habitat for the Kern Canyon slender salamander is present along west- and northwest-facing slopes along the Kern River in the vicinity of Stark Creek and upstream to the Democrat Dam Impoundment.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Batrachoseps relictus</i> relictual slender salamander	FPE	–	CSC	Found in seepages and springs in rocky areas with scanty tree cover, in a matrix of foothill woodland or riparian areas in creek bottoms. Rarely found far from surface water. Found at elevations ranging from 1,500 to 6,500 feet in elevation.	Known to occur. Relictual slender salamanders were not observed during studies for the TERR 2 TM (SCE 2025b). However, the NRIS query yielded two records within the FERC Project boundary (Forest Service 2022): <ul style="list-style-type: none">A 1960 detection in Lucas Creek adjacent to the Lucas Creek Trail; andA 1955 detection in Cow Flat Creek, approximately 0.12 mile from the confluence to Kern River. Five additional occurrences were recorded in the CNDDDB/NRIS within 1 mile of the Project (listed from south/southwest to north/northwest) (CNDDDB 2025, Forest Service 2022): <ul style="list-style-type: none">A 1970 detection along SR 178 in a tributary to Kern River, approximately 500 feet east of the Willow Spring Creek Road (also referred to as Democrat Dam Road);A 1967 detection in a drainage along SR 178 approximately 500 feet downslope of Adit 15 & 17;A 1964 detection along SR 178, approximately 0.66 mile east of the Willow Spring Creek Road (also referred to as Democrat Dam Road); andA 1960 detection along Stark Creek between Stark Creek Trail and Stark Creek Road. There is also a location-suppressed record of this species from the Breckenridge Mountain USGS 7.5-minute quadrangle dated from 2012 (CNDDDB 2025). Proposed Critical Habitat for the Kern Canyon slender salamander is present along west- and northwest-facing slopes along the Kern River upstream of the Forebay to the Democrat Dam Impoundment and along Lucas Creek.
<i>Ensatina eschscholtzii croceator</i> yellow-blotched ensatina	–	FSCC	WL	Found in tributaries of lower elevation canyons. Found close to streams and under rocks and logs and become active after precipitation events between January to April. Generally found around seeps and drainages and under the canopy of trees (Germano 2006).	Known to occur. One individual was found during the TERR 2 TM VES adjacent to Flume No. 1 in the Democrat Dam area. Additionally there is a recorded occurrence in Dougherty Canyon, a tributary just above Upper Richbar Day Use Area.
Reptiles					
<i>Phrynosoma blainvillii</i> coast horned lizard	–	–	CSC	Found in open areas of sandy soil in valleys, foothills, and semi-arid mountains. Prefers areas of low vegetation within grasslands, forests, woodlands, and chaparral. Commonly found along sandy washes and dirt roads. 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.	Known to occur. California horned lizard scat was observed at numerous locations in the vicinity of the Project, indicating that the species is likely present in sizable numbers (SCE 2012). <i>GIS data not available for these occurrences.</i>
<i>Aniella</i> spp. California legless lizard	–	–	CSC	Found in loose soil in sparsely vegetated areas, commonly in sandy washes, oak woodland, mixed conifer forest, and stream terraces.	Known to occur. Three individuals in two locations were observed in the study area during studies for the TERR 2 TM VES. There is one CNDDDB record approximately 0.75 mile upstream of the Democrat Dam Impoundment from 1992 (CNDDDB 2025).

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
Birds					
<i>Aquila chrysaetos</i> golden eagle	BCC Eagle Act	–	CFP (nesting and wintering), WL	Grasslands and early successional stages of forest and shrub habitats for foraging at elevations up to 11,500 feet. Secluded cliffs with overhanging ledges or large trees in open areas with unobstructed view for nesting.	Known to occur. Project contains suitable habitat for this species. <ul style="list-style-type: none">Golden eagles were observed flying over the access platform in the Stark Creek Trail area during studies for the TERR 2 TM (SCE 2025b).A pair of golden eagles were also observed in 2021 near the Kern River No. 1 Powerhouse (JNA-Consulting 2021). A NRIS query yielded one record for this species within 1 mile of the Project, a 1987 detection along Cow Flat Creek, approximately 0.75 mile from the Kern River (Forest Service 2022).
<i>Haliaeetus leucocephalus</i> bald eagle	Eagle Act, FD	FSCC	CE, CFP	Year-round resident in ice-free regions of California. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. Majority of bald eagles in California breed near reservoirs and nests are usually located within 1 mile of foraging habitat. Nests are typically placed in the branches of large conifer trees within dense stands of trees (Jackman and Jenkins 2004).	Known to occur. The Project provides suitable foraging habitat for this species. <ul style="list-style-type: none">An adult was observed circling over the Democrat Dam, Conduit No. 2 area during studies for the TERR 2 TM (SCE 2025b).An adult bald eagle was incidentally observed along the Kern River near the Stark Creek Road during other relicensing studies (SCE 2025b). Lake Isabella regularly supports wintering eagles which have been observed flying up the North Fork Kern River and high above Kern River No. 1 Project (SCE 1994). A NRIS query yielded one record for this species within 1 mile of the Project, a 2002 detection adjacent to Kern River, approximately 4 miles upstream of the Kern River No. 1 Powerhouse (Forest Service 2022).
<i>Buteo swainsoni</i> Swainson’s hawk	–	–	CT (nesting)	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Breeding habitat includes riparian woodland and trees adjacent to riparian systems. Riparian woodlands, juniper-sage flats, and oak woodlands for nesting. Open grasslands, pastures agricultural areas for foraging.	Known to occur. An individual was observed during the TERR 2 TM studies around the Stark Creek Trail (SCE 2025b).
<i>Circus cyaneus</i> northern harrier	BCC	–	CSC	A common winter visitor in southern California, but an increasingly rare breeding species in the region. Nests on the ground in marshes or grassy meadows. Feed on ground-dwelling mammals and other prey. They are migratory birds that spend winters in California.	Known to occur. An individual was observed during the TERR 2 TM studies around the Kern River No. 1 Powerhouse. The study area provides suitable foraging habitat for this species.
<i>Falco peregrinus anatum</i> American peregrine falcon	FD	–	CD	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.	Known to occur. An individual was observed during the TERR 2 TM studies along the Kern River upstream of Conduit No. 3. The study area provides suitable nesting and foraging habitat for this species.
<i>Gymnogyps californianus</i> California condor	FE	–	CE, CFP	Endangered, permanent resident of the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County, the Transverse Ranges, Tehachapi Mountains, and southern Sierra Nevada. Forages over wide areas of open rangelands, roosts on cliffs and in large trees and snags. Found mostly below 9,000 feet. Nests in caves, crevices, or sandstone ledges, typically at elevations below 6,500 feet.	Known to occur. A nesting pair is known to be present in Sequoia National Forest, in the vicinity of the Forebay (Forest Service 2018).

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Dryobates albolarvatus</i> White-headed woodpecker	BCC	–	–	Unusual resident restricted to mountainous pine forests in the western U.S. Feed heavily on large pine seeds and are mostly associated with old-growth ponderosa pine and sugar pine forests. They also often use recently burned areas.	Known to occur. One individual was observed in a foothill pine along Willow Spring Creek Road (Democrat Dam Road) during studies for the TERR 2 TM (SCE 2025b).
<i>Passerculus sandwichensis</i> Savannah sparrow	BCC	–	–	Found in open fields and meadows, pastures, meadows, salt marshes, prairies, dunes, and shores. Breeds in open areas with low vegetation such as grassland, marsh, and farmland. In winter they can be found on the ground, in low vegetation, and in open areas along road edges or farm adjacent.	Known to occur. Four adults were observed along Stark Creek Road during studies for the TERR 2 TM (SCE 2025b).
<i>Baeolophus inornatus</i> Oak titmouse	BCC	–	–	Generally found in oak woods, pinyon-juniper, river woods, shade trees. Most commonly occurs in oak woodland, including areas where oaks meet streamside trees or pines. They can also be found in well-wooded suburbs and rarely in coniferous forest in mountains. In the interior, also occurs in some woodlands dominated by pine, mixed oak-pine, or juniper.	Known to occur. An individual was observed along Stark Creek Road during studies for the TERR 2 TM (SCE 2025b).
<i>Icterus bullockii</i> Bullock’s oriole	BCC	–	–	Common summer resident in the west where it is found in forest edges, farmyards, leafy suburbs, isolated groves, oak or mesquite woodlands, and streamside woods, especially in cottonwood trees It can also be found in shrublands, savannahs, and thickets. Winters mostly in the tropics.	Known to occur. This species was observed on six different occasions during studies for the TERR 2 TM (SCE 2025b). <ul style="list-style-type: none">One female along the trail to Adit 14 & 15 was observed carrying nesting material into crevasse of a tree and emerged without materials.A pair was seen along the trail to Adit 14 & 15 displaying nesting behavior.Three mated pairs were seen along Dougherty Creek Trail showing nesting behavior and defending certain trees from other pairs.One adult was seen near Conduit No. 8.One adult was seen near Adit 12 & 13.One adult was seen in the Democrat Dam Impoundment area along the north shore across from the island.
<i>Spinus lawrencei</i> Lawrence's goldfinch	BCC	–	–	Nests in oak woodlands with scattered meadows, weedy fields, or chaparral with a nearby water source. Non-breeding birds are found in coastal scrub, pinyon pine–juniper woodlands, thickets, desert arroyos, cultivated fields, orchards, gardens, and parks.	Known to occur. This species was observed during studies for the TERR 2 TM near Lucas Creek Flume No. 4 (SCE 2025b).
Mammals					
<i>Antrozous pallidus</i> pallid bat	–	–	CSC	Grasslands, shrublands, woodlands, and forests from sea level to 10,000 feet in elevation. Typically, day roosts in caves, crevices, or mines. Night roosts are in more open areas. Requires open habitat for foraging. Pallid bat hibernates in winter. The maternity season is April – July.	Known to occur. The species was detected near Adit 13 & 14 utilizing acoustic recording equipment during studies for the TERR 2 TM in July and October (SCE 2025b).
<i>Corynorhinus townsendii</i> Townsend’s big-eared bat	–	FSCC	CSC	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. Hibernates October through April. Locally migratory only. Extremely sensitive to disturbance and may abandon a roost if disturbed.	Known to occur. A NRIS query yielded detections at three mines shown on Map 7.5-3 , including one mine located just east of the Willow Spring Creek Road (also referred to as the Democrat Dam Road) (Forest Service 2022, FERC and Forest Service 1998). CNDDDB also reports a 1993 observation within the mine (CNDDDB 2025).

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Eumops perotis californicus</i> western mastiff bat	–	–	CSC	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. A large roost colony was observed near the intake at Democrat Dam during the TERR 2 TM studies (SCE 2025b). The roost site is accessed through SCE’s locked gate to the intake. The species was also detected near the Kern River No. 1 Powerhouse, Adit 13 & 14, and the Democrat Dam utilizing acoustic recording equipment and at the gaging station by Cow Flat Creek through guano analysis during studies for the TERR 2 TM in July and October (SCE 2025b). A CNDDDB query yielded two additional records for this species within the study area (CNDDDB 2025): <ul style="list-style-type: none">• A 1963 detection near the confluence of Cow Flat Creek and Kern River;• A 1992 detection (updated 2006) of a roost located at the Democrat Dam Hotspring; and• A 1992 detection approximately 0.5 mile downstream of Democrat Dam.
<i>Lasiurus frantzii</i> western red bat	–	–	CSC	Roosts in forests and woodlands from seal 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.	Known to occur. The species was detected near the Kern River No. 1 Powerhouse, Adit 13 & 14, and the Democrat Dam area utilizing acoustic recording equipment during studies for the TERR 2 TM in July and October (SCE 2025b).
<i>Myotis thysanodes</i> fringed myotis	–	FSCC	CSC	Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer, generally at elevations of 4,000 to 7,000 feet in elevation. 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. Migratory species, making relatively short, local movements to suitable hibernacula.	Known to occur. This species was detected near Adit 13 & 14 utilizing acoustic recording equipment during the studies for the TERR 2 TM in October (SCE 2025b). A CNDDDB query yielded one record, a 1992 detection, at the mine located just east of the Willow Spring Creek Road (also referred to as the Democrat Dam Road) (see Townsend’s big-eared bat, above) (CNDDDB 2025).
May Potentially Occur in the Study Area					
Terrestrial Invertebrates					
<i>Bombus occidentalis</i> Western bumble bee	–	–	CC	The historical range of the western bumble bee (<i>Bombus occidentalis</i>) includes most of western North America. This species is dependent on continuous access to meadows with floral resources from spring through late summer within 0.3 to 0.5 mile of burrowing nests.	May potentially occur. Three individual bumble bees belonging to the genus <i>Bombus</i> were observed during wildlife surveys in conjunction with the TERR 2 TM (SCE 2025b). These individuals could not be identified down to a species level. The study area contains suitable habitat for this species.
Amphibians					
<i>Spea hammondi</i> western spadefoot	FPT	–	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats such as mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, and mountains. Requires ephemeral rainpools without non-native predators for breeding. Up to 4,500 feet in the southern Sierra foothills.	May potentially occur. The study area contains suitable habitat for this species.
Reptiles					
<i>Arizona elegans occidentalis</i> California glossy snake	–	–	CSC	Found in arid scrubby areas, rocky washes, grasslands, and chaparral in southern Sierra Nevada foothills and coast ranges. Ranges from the eastern San Francisco Bay area south to Baja California.	May potentially occur. The study area contains suitable habitat for this species.
<i>Masticophis flagellum ruddocki</i> San Joaquin whipsnake	–	–	CSC	Found in open, dry, treeless areas with little or no cover, including valley grasslands and saltbush scrub. Hides in rodent burrows, shaded vegetation, and under surface objects.	May potentially occur. The study area contains suitable habitat for this species.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Xantusia vigilis sierrae</i> Sierra night lizard	–	–	CSC	Found in the Greenhorn mountains in the southwest Sierra Nevada. It is found in association with yucca, foothill pine, chamise, pinyon pine, and juniper. Can be found under yucca logs and other cover. Occurs at elevations of 990 to 6,800 feet. Activity may begin in early April at low elevations and last until early fall, while emergence may be retarded until late springs at higher elevations.	May potentially occur. The study area contains suitable habitat for this species.
Birds					
<i>Agelaius tricolor</i> tricolored blackbird	BCC	FSCC	CT	Breeding habitat includes dense riparian vegetation with nearby accessible water and suitable foraging space for insect prey within a few kilometers of the nesting colony. Often forms large breeding colonies. Wintering habitat includes grasslands and agricultural fields with low-growing vegetation.	May potentially occur. Suitable emergent wetland nesting habitat is not present in the study area. Suitable grassland wintering habitat is present.
<i>Ammodramus savannarum</i> grasshopper sparrow	–	–	CSC	Grassland habitats with dense escape cover and tall herbaceous plants for perches.	May potentially occur. The study area contains suitable habitat for this species.
<i>Asio otus</i> Long-eared owl	BCC	–	CSC	Requires a combination of grassland or other open habitat for foraging, and dense tall shrubs or trees for nesting and roosting. Winter roosting owls can be found in pine stands or shelterbelts near grassland or pasture.	May potentially occur. The study area contains suitable habitat for this species.
<i>Chaetura vauxi</i> Vaux’s swift	–	–	CT	Fairly common in the coast ranges north of Sonoma County, in the Sierra Nevada, and Cascade Range. Nests in redwood and Douglas-fir habitats in large hollow trees and snags. Forages in open areas and over water.	May potentially occur. The study area contains suitable foraging habitat for this species.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE	–	CE	Found only in southern California, this species breeds in dense riparian tree and shrubs associated with rivers, swamps, wetlands, lakes, and other large water bodies at elevations ranging from 2,000 to 8,500 feet. Riparian habitat must be at least 0.25 acre in size and 30 feet wide to support nesting.	May potentially occur. The study area contains suitable foraging habitat for this species. The study area does not contain suitable nesting habitat. Known to breed at the Audubon Reserve at Lake Isabella (SCE 2012).
<i>Falco mexicanus</i> prairie falcon	–	–	WL	Nests on high cliff faces and requires open terrain for foraging. Occurs in annual grasslands, alpine meadows, but primarily associated with perennial grasslands, savannahs, rangeland, agricultural fields, and desert scrub. Not found in upper elevations of Sierra Nevada.	May potentially occur. The study area contains suitable foraging habitat. A nest site was observed in upper Stark Canyon in 1992 (SCE 1994).
<i>Icteria virens</i> yellow-breasted chat	–	–	CSC	An uncommon summer resident and migrant in coastal California and the foothills of the Sierra Nevada. Breeds in valley foothill riparian and desert riparian habitats. Requires riparian thickets of willow and brushy tangles near watercourses for cover. Found at elevations up to 4,800 feet in valley foothill riparian habitats and up to 6,500 feet in the eastern Sierra Nevada.	May potentially occur. The study area contains suitable nesting and foraging habitat for this species.
<i>Lanius ludovicianus</i> loggerhead shrike	–	–	CSC	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches in the lowlands and foothills throughout California.	May potentially occur. The study area contains suitable nesting and foraging habitat for this species.
<i>Progne subis</i> purple martin	–	–	CSC	An uncommon, local summer resident in wooded low- to mid-elevation habitats. Found in valley foothill, montane hardwood, montane hardwood-conifer, and riparian habitats. Nests in tall, old trees near an open body of water, and occasionally in residential areas.	May potentially occur. The study area contains suitable nesting and foraging habitat for this species.
<i>Setophaga petechica</i> yellow warbler	–	–	CSC	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.	May potentially occur. The study area contains suitable nesting and foraging habitat for this species.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Strix occidentalis occidentalis</i> California spotted owl	FPT	–	CSC	Dense, old-growth, multi-layered mixed conifer, redwood, Douglas-fir, and oak woodland habitats in the western slope of the Sierra Nevada, from sea level to elevations of approximately 7,600 feet.	May potentially occur. The FERC Project boundary does not contain suitable nesting habitat. Suitable foraging habitat is present in the study area. A NRIS query yielded 11 records for this species within 1 mile of the Project: <ul style="list-style-type: none">Three detections south of the confluence of Dougherty Creek and Kern River, with one occurring in 1990 and two in 1991;Five detections northwest of the confluence of Dougherty Creek and Kern River, occurring in 1975, 1983, 1985, 1986, and 1987;A 1991 detection located approximately 0.25 mile east of the confluence of Lucas Creek and Kern River;A 1990 detection located approximately 0.5 mile southeast of the confluence of Cow Flat Creek and Kern River; andA PAC located approximately 0.75 mile north of Democrat Dam.
Mammals					
<i>Bassariscus astutus</i> Ringtail	–	–	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.	May potentially occur. The study area supports potential habitat for this species.
<i>Euderma maculatum</i> spotted bat	–	–	CSC	A widespread, but rare species throughout the western United States. Found in habitats that range from deserts to yellow pine forest. Roosts in caves, rocky crevices and snags and requires open water.	May potentially occur. The study area supports potential roosting and foraging habitat.
<i>Onychomys torridus tularensis</i> Tulare grasshopper mouse	–	–	CSC	Habitats include compact soils with a sparse growth of perennial grasses; blue oak savannas; desert scrub associations composed of grasses and shrubs; valley sink and saltbush scrub communities on the valley floor; and valley grassland. The historic range of the Tulare grasshopper mouse extended along the foothills and floor of the southern San Joaquin Valley from western Merced and eastern San Benito counties, east to Madera County, and south to the foothills of the Tehachapi and San Emigdio mountains. It also occurs on the Carrizo Plain in eastern San Luis Obispo County, Cuyama Valley, Caliente Creek Wash in southern Kern County, Weldon and Kelso Valley in northeastern Kern County, the Tulare Basin, and the Panoche Valley. Elevation range is between 279 to 2,650 feet.	May potentially occur. The study area contains suitable grassland habitat for this species.
<i>Taxidea taxus</i> American badger	–	–	CSC	This species is considered a furbearing mammal under the California Fish and Wildlife Code. 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.	May potentially occur. The study area contains suitable grassland habitat for this species.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE	–	CT	Grasslands and shrubland areas in the San Joaquin Valley with friable soils for building underground dens. Denning begins around September, mating occurs from December to March, and pups are born February through April. Critical Habitat has not been designated for this species.	May potentially occur. The study area contains suitable habitat for this species.
Unlikely to Occur in the Study Area					
Terrestrial Invertebrates					
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT	–	–	Central valley riparian forests and adjacent upland vegetation along river corridors, in close association with elderberry (<i>Sambucus</i> spp.) plants.	Unlikely to occur. The study area supports appropriate habitat for this species. However, on September 17, 2014, USFWS revised the range for this species to exclude Kings, Kern, and Tulare counties.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Euproserpinus euterpe</i> Kern primrose sphinx moth	FT	–	–	Presently known only from the Walker Basin area (4,500 feet elevation), where it occurs on sandy soils wherever its larval foodplant, <i>Camissonia contorta epilobiodes</i> grows. This plant grows in dry, disturbed, or gravelly cismontane areas below 5,000 feet elevation and has been associated with several plant communities and ranges from Baja to central California (SCE 1994).	Unlikely to occur. SCE conducted field surveys for the moth’s larval foodplant to support the previous license application. No <i>Camissonia contorta epilobiodes</i> populations were identified in the study area (SCE 1994).
<i>Apodemia virgulti davenporti</i> Behr’s metalmark	–	FSCC	–	Known only from the southern Sierra Nevada. Found along the Kern River in Tulare County, Southern Greenhorn Mountains, and Piute Mountains in Kern County between 4,000 to 6,000 feet in elevation. Larvae feed on <i>Eriogonum fasciculatum</i> host plants.	Unlikely to occur. The study area is outside the elevation range of this species.
<i>Plebejus icarioides evius</i> Evius blue	–	FSCC	–	Found in forest clearings, meadows, stream margins, and edge habitat with lupine host plants. Generally found in montane areas at intermediate elevations. Known from the Greenhorn Mountains at Shirley Meadows in Kern County.	Unlikely to occur. The study area is outside the geographic range of this species and does not contain suitable habitat.
<i>Plebejus saepiolus aehaja</i> greenish blue	–	FSCC	–	Found in wet meadow habitats on the Kern Plateau and the Greenhorn Mountains. Uses <i>Trifolium</i> spp. as host plants.	Unlikely to occur. The study area is outside the geographic range of this species and does not contain suitable habitat.
<i>Speyeria egleis tehachapina</i> Tehachapi Mountain silverspot	–	FSCC	–	Found only in Kern County in the Tehachapi and Piute Mountains at elevations between 7,000 and 8,400 feet in elevation. Found in montane meadows, forest openings, and rocky outcrops where host <i>Viola</i> spp. occurs.	Unlikely to occur. The study area is outside the geographic range of this species.
Aquatic Invertebrates					
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT	–	–	Vernal pool ecosystems that hold water for a minimum of 18 days, but not permanently flooded emergent wetlands.	Unlikely to occur. Suitable vernal pool habitat is not present within the study area. The study area is outside of designated Critical Habitat.
Amphibians					
<i>Batrachoseps bramei</i> fairview slender salamander	–	FSCC	–	Occurs in north-facing talus-covered slopes in narrow canyons where areas are moist and cool in the spring. Endemic to California.	Unlikely to occur. The study area is outside the geographic range of this species.
<i>Batrachoseps robustus</i> Kern Plateau salamander	–	FSCC	–	Occurs in moist habitats of pine and fir forests. In drier habitats, occur in pinon pine, sagebrush, and oaks. Found under leaf litter, logs, rocks near springs and streams.	Unlikely to occur. The study area is outside the geographic range of this species.
Reptiles					
<i>Anniella grinnelli</i> Bakersfield legless lizard	–	–	CSC	Found in loose soil within sparsely vegetated areas of beach dunes, chaparral, woodlands, desert scrub, sandy washes, and stream terraces. Restricted to the southern San Joaquin Valley and the eastern Carrizo Plain.	Unlikely to occur. The study area is outside the geographic range for this species.
<i>Gambelia silus</i> blunt-nosed leopard lizard	FE	–	CE, CFP	Found in flat, open, sparsely vegetated alkali scrub and desert habitats below 2,400 feet in elevation, within the San Joaquin Valley and adjacent foothills. USFWS has not designated Critical Habitat for this species.	Unlikely to occur. The study area does not contain suitable habitat for this species.
<i>Thamnophis gigas</i> giant garter snake	FT	–	CT	Uses a wide variety of habitats within the Californian Central Valley including forests, mixed woodlands, grasslands, chaparral, and agricultural lands. Often occurs near aquatic habitat including ponds, marshes, and streams where it freely retreats to when alarmed.	Unlikely to occur. The study area does not contain suitable habitat for this species.
Birds					
<i>Agelaius phoeniceus aciculatus</i> Kern red-winged blackbird	–	FSCC	CSC	Known from east central Kern County, in the Walker Basin and on the South Fork of the Kern River in marshes on the east end of Lake Isabella. Prefers marshy meadows, emergent wetlands, and lagoons with large growths of cattails and sedges.	Unlikely to occur. The study area does not contain suitable emergent wetland habitat for this species.

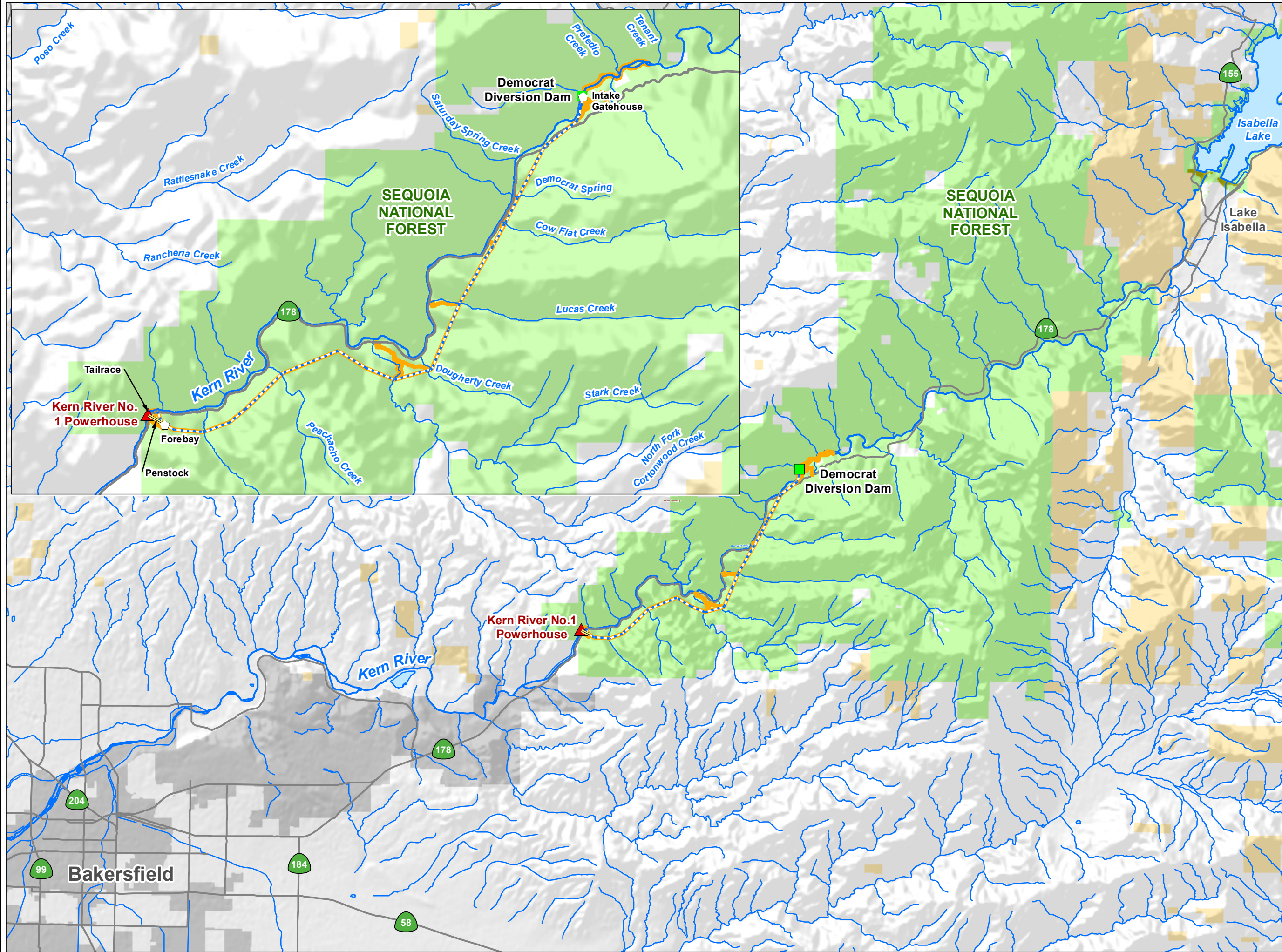
Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Astur atricapillus</i> American goshawk	–	FSCC	CSC	Middle to high elevation, mature, dense conifer forests for foraging and nesting. Casual in foothills during winter, northern deserts in pinyon-juniper woodland, and low-elevation riparian habitats.	Unlikely to occur. The study area does not contain suitable habitat for this species.
<i>Athene cunicularia</i> burrowing owl	–	–	CSC	Breeding habitat includes rodent burrows in sparse grassland, desert, and agricultural habitats. They require open, sparsely vegetated areas on mostly level terrain with an abundance of active small mammal burrow. Found in lowlands throughout California.	Unlikely to occur. The study area does not contain suitable habitat (level terrain) for this species.
<i>Strix nebulosa</i> great gray owl	–	FSCC	CE	Nests in old-growth coniferous forests and forages in montane meadows. Distribution includes high elevations of the Sierra Nevada and Cascade ranges, from 4,500 to 7,500 feet in elevation.	Unlikely to occur. The study area is outside the elevation range of this species.
<i>Dendragapus fuliginosus howardi</i> Mount Pinos sooty grouse	–	FSCC	CSC	Found in high-elevation conifer forest in the spring for hooting sites that contain open pine/fir forests at elevations of 6,000 to 10,000 feet.	Unlikely to occur. The study area is outside the elevation range of this species.
<i>Contopus cooperi</i> olive-sided flycatcher	BCC	–	CSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats. Nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine forests from 3,000 to 9,000 feet in elevation.	Unlikely to occur. The study area does not contain suitable habitat for this species.
<i>Empidonax traillii adastus</i> willow flycatcher	–	FSCC	CE	Found in the Great Basin and central Rocky Mountains south to Utah and Colorado. Found in a variety of shrubby habitats, but particularly montane riparian habitat with extensive growth of willows.	Unlikely to occur. The study area is outside the geographic range of this species.
<i>Empidonax traillii brewsteri</i> little willow flycatcher	–	–	–	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. Requires meadows at least 1 acre in size for breeding, prefers meadows larger than 10 acres (Green et al. 2003).	Unlikely to occur. The study area does not contain suitable wet meadow habitat for this species.
<i>Melospiza melodia graminea</i> Channel Island song sparrow (Santa Barbara song sparrow)	BCC	–	CSC	Limited to San Miguel and Santa Rosa Island. It is also a transient visitor in the spring and fall to Anacapa Island. It was a former resident of Santa Barbara Island where it was driven to extinction. Sparrow most often inhabiting shrubs on moist ground near freshwater, saltwater or coastline. On San Miguel and Santa Rosa, they have been found to be most abundant in areas with dense shrubs, and unlike on the mainland, were found in areas well-removed from water. They strongly prefer coastal sage scrub and grassland, while avoiding chaparral, woodland and pine habitats.	Unlikely to occur. The study area is outside the geographic range of this species.
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE	–	CE	Breeds in riparian habitats (typically in dense willows) in the southwestern U.S. Winters in Baja California. Its distribution includes cismontane southern California (most breeding pairs occur in San Diego County) extending north up to the Owens Valley and east into Death Valley National Park.	Unlikely to occur. The study area is outside the geographic range and does not contain suitable riparian habitat for this species.
Mammals					
<i>Dipodomys nitratoides nitratoides</i> Tipton kangaroo rat	FE	–	CE	Tipton kangaroo rats are limited to arid-land communities occupying the Valley floor of the Tulare Basin in level or nearly level terrain. They are currently found in scattered, isolated areas clustered in low-elevation valleys of Tulare and Kern County. USFWS has not designated Critical Habitat for this species.	Unlikely to occur. The study area is outside the geographic range for this species and does not contain suitable habitat.
<i>Dipodomys ingens</i> giant kangaroo rat	FE	–	CE	Found in dry, sandy grasslands. Found only in isolated areas west of the San Joaquin Valley, including the Carrizo Plain, Elkhorn Plain, and Kettleman Hills.	Unlikely to occur. The study area is outside the geographic range for this species.

Scientific/Common Name	Federal Status	SQF Status	State Status	Habitat	Likelihood for Occurrence
<i>Ammospermophilus nelsoni</i> Nelson's (=San Joaquin) antelope ground squirrel	–	–	CT	Found in the western San Joaquin Valley from southern Merced County south to Kern County. Historical populations in eastern Kern County foothills are thought to be extirpated. Prefers areas with sandy loam soils, alkali scrub vegetation, and dry washes, at elevations of 200 to 1,200 feet.	Unlikely to occur. The study area is outside the geographic range of this species.
<i>Martes caurina sierrae</i> Sierra marten	–	FSCC	–	Martens are known from the high-elevation forested plant communities. Optimal habitats are various mixed evergreen forests with more than 40% crown closure and large trees and snags for den sites. Most commonly found in red fir and lodgepole pine forests between 4,000 and 10,600 feet elevation.	Unlikely to occur. The study area is outside the elevation range of this species.
<i>Pekania pennanti</i> fisher — Southern Sierra Nevada DPS	FE	–	CT, CSC	Large areas of mature, dense forest red fir, lodgepole pine, ponderosa pine, mixed conifer, and Jeffery pine forests with snags and greater than 50% canopy closure. Known from elevations of 4,000 to 8,000 feet.	Unlikely to occur. The study area is outside the elevation range and lacks suitable habitat for this species.

Key: SQF = Sequoia National Forest

- Federal Status**
BCC = Bird of Conservation Concern
Eagle Act = Bald and Golden Eagle Protection Act
FC = Federal Candidate
FD = Federally Delisted
FE = Federal Endangered
FPE = Federal Proposed Endangered
FPT = Federally Proposed Threatened
FT = Federal Threatened
- State Status**
CFP = California Fully Protected
CSC = California Species of Concern
CC = California Candidate
CT = California Threatened
CE = California Endangered
CD = California Delisted
WL = Watch List
- SQF Status**
FSCC = Sequoia National Forest Species of Conservation Concern

MAPS



Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Flowline
- Penstock
- FERC Boundary

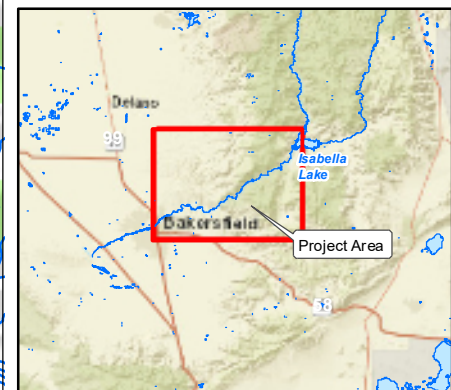
Other Features

- Highway
- Watercourse
- Water Body

Land Jurisdiction*

- U.S. Forest Service
- U.S. Bureau of Land Management
- U.S. Army Corps of Engineers
- Private (Blank)

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA EDISON
Energy for What's AheadSM

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map WRMP-1

Project Vicinity and Land Jurisdiction

Date: 10/9/2025

0 0.5 1 2 Miles

Projection: UTM Zone 11
Datum: NAD 83

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DRAFT
VISUAL RESOURCES PROTECTION PLAN

SOUTHERN CALIFORNIA EDISON
Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)



December 2025

TABLE OF CONTENTS

	Page
1.0 Introduction.....	1
2.0 Purpose and Objectives	1
3.0 Project Location.....	1
4.0 Land Use and Management Pertinent To Visual Resources.....	1
5.0 Project Facilities	2
6.0 Measures to Maintain or Improve Visual Quality	3
6.1 General Facility Operations and Maintenance	4
6.2 Project Facilities Painting.....	4
7.0 Consultation.....	4
8.0 References	5

LIST OF MAPS

Map VRPP-1.	Project Vicinity and Land Jurisdiction.....	7
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LIST OF ACRONYMS

FERC	Federal Energy Regulatory Commission
Forest Plan	Sequoia National Forest Land Management Plan
Forest Service	United States Forest Service
HPMP	Historic Properties Management Plan
O&M	operations and maintenance
Project	Kern River No. 1 Hydroelectric Project
SCE	Southern California Edison
SIO	Scenic Integrity Objectives
SQF	Sequoia National Forest
SR-178	State Route 178
VRPP	Visual Resources Protection Plan

1.0 INTRODUCTION

Southern California Edison (SCE) prepared this Visual Resources Protection Plan (VRPP) for the Kern River No. 1 Hydroelectric Project (Project). The VRPP will be implemented as a condition of a new license issued by the Federal Energy Regulatory Commission (FERC) for the Project.

This VRPP was developed to support ongoing Project operations and maintenance (O&M) activities and incorporates measures from the current license pertaining to the protection of visual resources and the aesthetic environment. The VRPP applies to existing Project facilities and any facility modifications or improvements that might occur over the term of the new license.

The Project is eligible for listing on the National Register of Historic Places as a historic district. All proposed facility maintenance, repair, modification, or new construction must comply with the Historic Properties Management Plan (HPMP) developed for the Project.

2.0 PURPOSE AND OBJECTIVES

The purpose of this VRPP is to identify and describe the measures SCE will implement over the term of the new license to maintain or improve the existing visual condition of Project facilities with respect to the Forest Service's current land management guidelines for visual and aesthetic resources, including the Sequoia National Forest (SQF) Land Management Plan (United States Forest Service [Forest Service] 2023). In addition, this VRPP describes how SCE will consult and coordinate with the Forest Service over the term of the new license when implementing future maintenance/repairs that have the potential to affect visual resources on Forest Service lands.

The objectives of the VRPP include:

- Maintain consistency between SCE's ongoing Project O&M activities and applicable land management direction.
- Minimize effects of Project features on the scenic landscape.

3.0 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California (Map VRPP-1). The Project occupies federal lands within the SQF, administered by the Forest Service.

4.0 LAND USE AND MANAGEMENT PERTINENT TO VISUAL RESOURCES

Federal land within the SQF is administered by the Forest Service in accordance with the SQF Land Management Plan (Forest Plan). The SQF Forest Plan identifies and maps lands of specific character and defines boundaries of management areas or designated areas where the characteristics that define those lands exist. Pertinent to visual resources

are the Forest Service Scenic Integrity Objectives (SIO). SIOs define the desired scenic quality and diversity of a landscape based on the physical and sociological characteristics of the area. SIOs were assigned to the management areas that comprise the SQF as a part of the Forest Plan. The Forest Service identifies scenic integrity as a continuum ranging over five levels: Very High, High, Moderate, Low, and Very Low. The SIO for most of the land within the FERC Project boundary is “High” with some scattered sections of “Moderate.” The powerhouse, switchyard and forebay operations area are in an area with “High” SIO. Democrat Dam is in a section with “Moderate” SIO. Refer to License Application, Exhibit E, Section 7.11, Map 7.11-1, which illustrates designated Forest Service SIOs with respect to the Project facilities within the SQF.

Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places. SCE currently implements a Cultural Resources Management Plan to manage potential effects to cultural resources from Project O&M activities. As part of the relicensing process, SCE is developing a HPMP as an update to the Cultural Resources Management Plan that will incorporate the results from cultural resource studies conducted for relicensing, concurrence on eligibility received from the State Historic Preservation Officer and measures to avoid, minimize, or mitigate adverse effects to cultural resources from O&M activities.

The Forest Service has identified the lower Kern River from Lake Isabella 31 miles downstream to the canyon mouth above Bakersfield (inclusive of the Project area) as a river that meets Wild and Scenic eligibility requirements. The lower Kern River meets these requirements under the classification of “eligible recreational” river with identified outstanding remarkable values for scenery, recreation, wildlife, population and habitat, prehistory, and history (Forest Service 2023). The criteria for a Wild and Scenic Recreation River classification includes existing impoundments and diversions, as long as the waterway remains generally natural and riverine in appearance.

5.0 PROJECT FACILITIES

The Project is located on the Kern River in the foothills along the western slope of the Sierra Nevada within Kern County, California. The landscape within and surrounding the Project (from the Democrat Dam Impoundment downstream to the powerhouse) consists of a narrow canyon with dense vegetation along the riverbank, granitic outcroppings, and steeply angled grass-covered slopes rising as much as 1,500 feet above the riverbed. The grey/tan rock outcroppings vary in size from small boulders to dramatic vertical cliffs. At the upper end of the Project, the grassy slopes above the river are also dotted with mixed evergreens and oaks. At the lower end of the Project, the canyon opens and the landscape changes to open rolling foothills vegetated with sparse grasses. The river itself is perennial, though water flow fluctuates significantly over the course of the year, depending on upstream operations at Lake Isabella.

The Project facilities were constructed in the early 1900s with minimal upgrades or modifications over the succeeding years; however, several existing facilities are visible on the landscape. The visibility of these facilities to the public is variable and based on

viewing location, vegetation, and topography. Project facilities (from upstream to downstream) include Democrat Dam and its 27-acre impoundment; an intake structure upstream of the diversion dam, which includes two steel trash racks; an 8.5-mile water conveyance system consisting of sandbox, flowline, forebay, and penstock that connects the intake structure at Democrat Dam with the powerhouse; the powerhouse and associated equipment; access roads and trails; power/communication lines; gaging stations; and ancillary and support facilities. Project facilities are painted in earth tones to blend into the surrounding landscape, and road cuts have either naturally revegetated or have been revegetated to obscure the effects of road construction (SCE 2004). An overview of Project facilities is shown on Map VRPP-1.

Project facilities are visible from State Route 178 (SR-178), the primary road from which to access the lower Kern River and Project facilities, and from various Project access roads and trails. Specifically, facilities visible from SR-178 include the following:

- Democrat Dam and impoundment.
- Powerhouse area, including the two-story powerhouse, adjacent switchyard, and ancillary support buildings.
- Forebay operations area, including ancillary support buildings, the aerial tram, and the forebay overflow spillway pipe.
- Various Project access roads and trails.

Project facilities are intermittently visible from some trails in the immediate vicinity of the Project. Facilities that may be seen from trails include the gated intake structure, sandbox, forebay, and portions of the water conveyance system (aboveground flumes and conduits). Most of the water conveyance system (approximately 8.5 miles) is comprised of underground tunnels. The penstock is also buried and not visible.

The Forest Service operates four developed day-use areas along the bypass reach; Project facilities are not visible from these locations.

6.0 MEASURES TO MAINTAIN OR IMPROVE VISUAL QUALITY

This section identifies proposed measures that SCE will implement to maintain or improve the existing visual condition of Project facilities over the term of the new license. The proposed measures incorporate current license conditions pertaining to the protection of visual resources.

No changes in the existing facilities or the maintenance of these facilities are proposed under the Application for New License. Therefore, Project-related activities will generally be limited to minor improvements and routine O&M activities. In the past, SCE has worked with the Forest Service to ensure that changes to facilities were conducted to minimize aesthetic impacts. This VRPP outlines general aesthetic preservation and enhancement measures that will continue to be followed. These measures are intended as guidelines.

6.1 GENERAL FACILITY OPERATIONS AND MAINTENANCE¹

General O&M of the Project will comply with the requirements of the FERC license and associated protection, mitigation and enhancement measures. When major modification to a Project facility or a full replacement is required, SCE will consult with the Forest Service, follow the requirements of the HPMP, and obtain approval from the Forest Service before initiating such activity.

No new structures are proposed at this time. If, over the term of the new license, new structures or replacement (not of like kind) of old structures are needed on Forest Service lands, SCE will consult with the Forest Service prior to installation. If feasible, structures will be placed within the footprint of or very near areas where existing structures and/or areas of existing ground disturbance are located. These new structures will be painted in earth tones to blend in with the surrounding areas in accordance with Forest Service guidance and the requirements of the HPMP. If needed for screening purposes, adjacent areas to new structures and associated facilities will be landscaped to conform with similar vegetation communities to the surrounding areas.

SCE will consult with the Forest Service before planting vegetation for screening purposes and/or before implementing revegetation following more extensive ground disturbance.

6.2 PROJECT FACILITIES PAINTING²

During the new license term, existing Project facilities may require repainting in accordance with routine painting requirements and schedules. SCE will repaint existing facilities using the same color scheme as currently used. However, if that color is no longer available or a new facility is built and requires painting, SCE is committed to selecting neutral paint color schemes that blend in with the surrounding landscapes, thereby reducing visual effects. The new color will be selected in accordance with Forest Service guidance and the requirements of the HPMP.

7.0 CONSULTATION

Over the term of the new license, SCE will participate in an Annual Consultation Meeting with the Forest Service to discuss Project O&M activities that were implemented the previous year, including any emergency repairs, and identify activities planned for the next calendar year. During this annual consultation meeting, SCE will discuss any planned facility maintenance that has the potential to affect visual resources. The goals of this meeting are to share information, planned maintenance activities, and proposed avoidance and minimization measures.

As land management plans are likely to be updated periodically over the term of the new license, when they are updated, management measures applicable to the Project will be

¹ This measure is based on Forest Service 4(e) Condition No. 10 (FERC 1998).

² This measure is based on License Article 406 (FERC 1998).

reviewed and discussed with the SQF during the annual consultation meeting to maintain ongoing compliance with changing requirements.

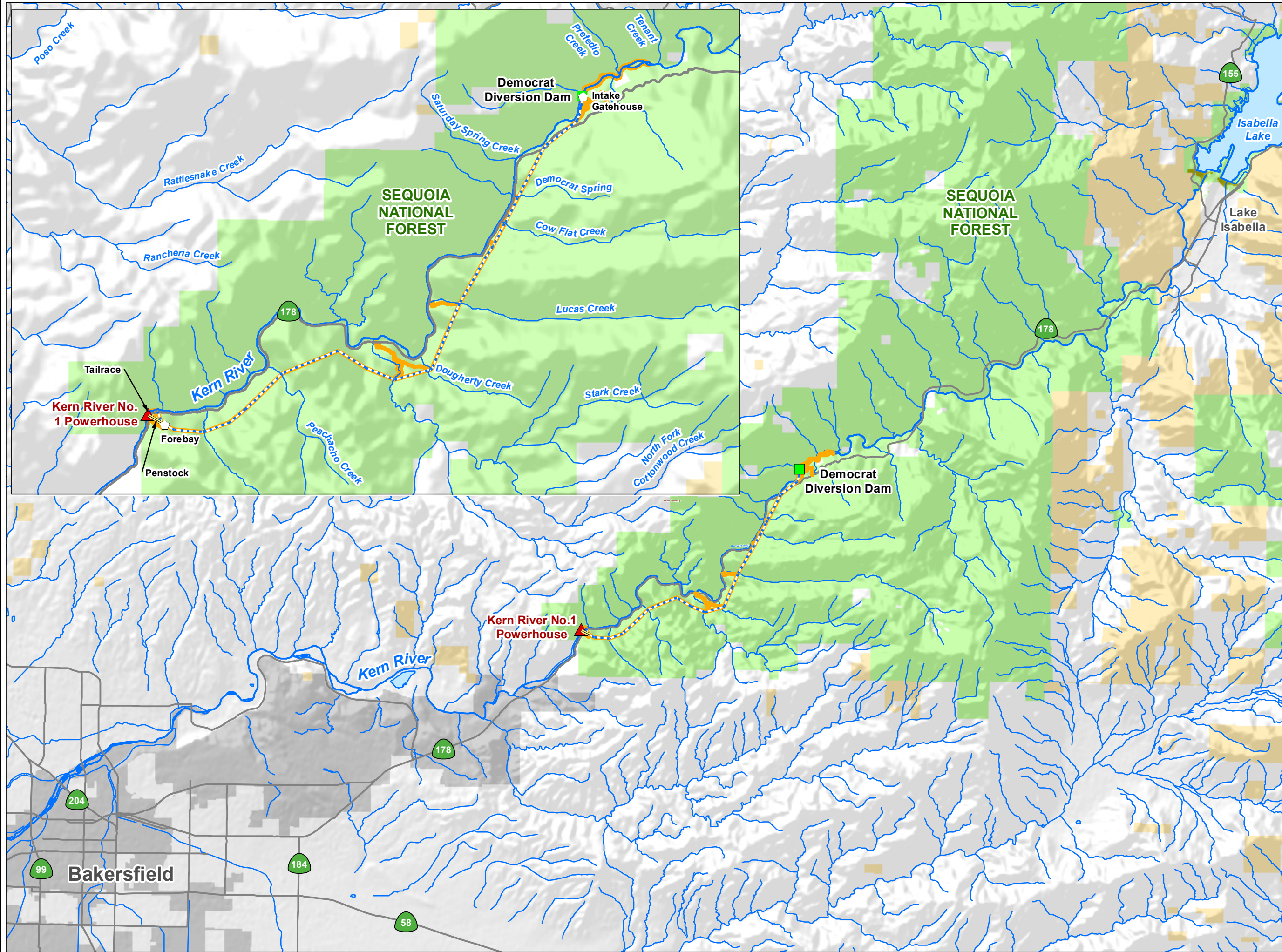
8.0 REFERENCES

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MAPS



Facilities

- Dam
- Powerhouse
- Water Conveyance Feature
- Flowline
- Penstock
- FERC Boundary

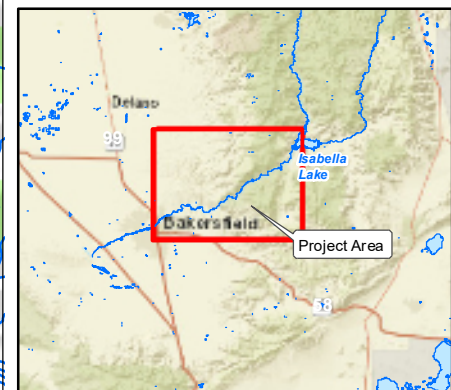
Other Features

- Highway
- Watercourse
- Water Body

Land Jurisdiction*

- U.S. Forest Service
- U.S. Bureau of Land Management
- U.S. Army Corps of Engineers
- Private (Blank)

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA EDISON
Energy for What's AheadSM

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map VRPP-1
Project Vicinity and Land Jurisdiction

Date: 10/9/2025

0 0.5 1 2 Miles

Projection: UTM Zone 11
Datum: NAD 83

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