SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Wayne P. Allen
Principal Manager
Regulatory Support Services

Filed Electronically

October 17, 2023

Ms. Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: Kern River No. 1 Hydroelectric Project (P-1930-090)
Proposed Study Plan

Dear Secretary Bose:

On May 5, 2023, Southern California Edison (SCE) filed a Notice of Intent (NOI) and Pre-Application Document (PAD) with the Federal Energy Regulatory Commission (FERC) to seek a new license for the existing 26.3-megawatt (MW) Kern River No. 1 Hydroelectric Project, FERC Project No. 1930 (Project). The PAD provided FERC, federal and state agencies, and other interested parties with background information related to Project facilities, operations, and maintenance activities; summarized existing, relevant, and reasonably available information; defined pertinent Project issues; and identified potential study needs. The PAD included 13 Draft Technical Study Plans that SCE determined were needed to address issues for which existing information may not be adequate. The overall objective of the studies is to develop sufficient information to identify potential Project effects and to develop proposed new license conditions, as appropriate, that reasonably balance multiple resource interests.

On June 29, 2023, FERC issued a Notice of Commencement of Pre-Filing Process and Scoping Document 1 (SD1) for the Project. SD1 provided interested parties with FERC's preliminary list of issues and alternatives to be addressed in the National Environmental Policy Act document analyzing potential conditions of a new Project license. Additionally, FERC requested that any party interested in providing comments on the PAD and SD1 and/or submitting formal study requests do so by September 5, 2023, in accordance with a 60-day comment period. Six comment letters were submitted by the deadline[1], four of which included study requests, as denoted by an asterisk:

- Neil Nikirk, July 11, 2023*
- Santa Rosa Indian Community of the Santa Rosa Rancheria, July 20, 2023
- U.S. Department of the Interior, National Park Service, August 31, 2023*

[1] The Santa Rosa Indian Community of the Santa Rosa Rancheria was contacted by FERC for comments on the PAD but had no comments, deferring to local Indian tribes. No additional comments or study requests were received. Kern River Boaters filed comments on the PAD that provided input on aesthetics, fishing, and boating but did not submit any study requests.

2244 Walnut Grove Avenue
Rosemead, CA 91770
626.302.9741
wayne.allen@sce.com

- State Water Resources Control Board, September 1, 2023*
- American Whitewater, September 5, 2023*
- Kern River Boaters, September 5, 2023

On August 23, 2023, SCE filed with FERC Updated Draft Technical Study Plans. The Updated study plans incorporated stakeholder comments received during 13 Technical Working Group meetings between June 28 and August 30, 2023. The Updated Draft Technical Study Plans supersede the Draft Technical Study Plans filed in the PAD in May 2023.

As set forth in 18 CFR § 5.11, a Licensee must file a Proposed Study Plan (PSP) with FERC to address study requests by interested parties and provide an explanation of why any requests were not adopted. Based on study requests filed with FERC, SCE revised four technical study plans:

- AQ-1 Hydrology
- AQ 2- Water Quality/Water Temperature
- REC 2 – Recreation Facility Use Assessment, and
- REC 3 – Whitewater Boating

The PSP (Attachment 1) identifies study requests received from interested parties and SCE's response (Section 2.3); presents study plans proposed by SCE (Section 2.4); provides information regarding the upcoming study plan meeting (Section 3); defines the process for study implementation and reporting (Section 4); and describes the annual study plan progress report and meeting schedule (Section 5). The PSP also includes Appendix A, Stakeholder Study Requests, and Appendix B, Technical Study Plans.

The PSP and other Project relicensing documents can be obtained from FERC's website at eLibrary | Federal Energy Regulatory Commission (ferc.gov) or SCE's Kern River No. 1 Hydroelectric Project relicensing website at www.sce.com/kr1. In accordance with FERC's Process Plan and Schedule contained in Appendix B of SD1, any individual or entity interested in submitting comments on the PSP must do so by January 15, 2024. FERC encourages electronic filing using FERC's eFiling at https://ferconline.ferc.gov/FERC_Online.aspx. Commenters can submit comments using the eComment system at https://ferconline.ferc.gov/QuickComment.aspx.

As required by 18 CFR § 5.11(e), SCE will hold a virtual Study Plan Meeting on November 14, 2023 to: (1) present SCE's PSP; (2) discuss information gathering or study requests from stakeholders; and (3) attempt to resolve any outstanding issues with respect to SCE's PSP. Meeting details are as follows:

Date:	November 14, 2023
Time:	1:00 – 3:00 pm
Meeting Link:	Provided in Teams Meeting Invitation (to be sent separately)
Dial-in (audio only):	Provided in Teams Meeting Invitation (to be sent separately)

SCE looks forward to working with FERC and interested parties on the Kern River No. 1 Hydroelectric Project relicensing. If you have any questions regarding this filing, please contact David Moore, SCE Project Manager, by phone at (626) 302-9494 or via e-mail at david.moore@sce.com.

Sincerely,

SOUTHERN CALIFORNIA EDISON COMPANY

DocuSigned by:
Wayne Allen
106CF18A73D445F...

Wayne P. Allen
Principal Manager
Regulatory Support Resources

Enclosures:

Attachment 1: Proposed Study Plan for the Kern River No. 1 Hydroelectric Project

Appendix A: Stakeholder Study Requests

Appendix B: Technical Study Plans

Attachment 1

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

Proposed Study Plan

SOUTHERN CALIFORNIA EDISON COMPANY

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

Proposed Study Plan

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Prepared by:

Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
www.sce.com/kr1

October 2023

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APPENDICES

1.0 INTRODUCTION

The following provides Southern California Edison Company's (SCE) Proposed Study Plan for the relicensing of the Kern River No. 1 Hydroelectric Project (Project) (FERC Project No. 1930) required by Title 18 of the Code of Federal Regulations (CFR) § 5.11. To relicense the Project, SCE is using the Federal Energy Regulatory Commission's (FERC) Integrated Licensing Process (ILP), as specified in 18 CFR §§ 5.1 through 5.31.

On May 5, 2023, SCE filed a Notice of Intent (NOI) and Pre-Application Document (PAD) with FERC to seek a new license for the existing 26.3-megawatt (MW) Project. The PAD provided FERC, federal and state agencies, and other interested parties with background information related to Project facilities, operation, and maintenance activities; summarized existing, relevant, and reasonably available information; defined pertinent Project issues; and identified potential study needs. The PAD also included 13 Draft Technical Study Plans that SCE determined were needed to address issues for which existing information may not be adequate. The overall objective of the studies is to develop sufficient information to identify potential Project effects and to develop new license conditions that reasonably balance multiple resource interests.

On June 29, 2023, FERC issued a Notice of Commencement of Pre-Filing Process and Scoping Document 1 (SD1) for the Project relicensing. FERC also requested that any individual or entity interested in providing comments on the PAD and SD1 and/or submitting formal study requests do so by September 5, 2023. During the comment period, FERC conducted a site visit on August 1, 2023, and a public scoping meeting on August 2, 2023. Transcripts of FERC's scoping meeting can be found on FERC's eLibrary at eLibrary | Federal Energy Regulatory Commission (ferc.gov).

On August 23, 2023, SCE filed with FERC Updated Draft Technical Study Plans. The Updated Draft Technical Study Plans incorporated stakeholder comments received during 13 Technical Working Group meetings between June 28 and August 30, 2023. The Updated Draft Technical Study Plans supersede the Draft Technical Study Plans filed in the PAD in May 2023.

This document identifies study requests received from interested parties and SCE's response (Section 2.3); presents SCE's Proposed Study Plan (PSP) (Section 2.4); provides information regarding the upcoming PSP meeting (Section 3); defines the process for study implementation and reporting (Section 4); and describes the annual progress report and meeting schedule (Section 5). The PSP also includes Appendix A, Stakeholder Requests and Appendix B, Technical Study Plans.

2.0 DEVELOPMENT OF TECHNICAL STUDY PLANS

2.1 DRAFT TECHNICAL STUDY PLANS

Based on existing Project operation and maintenance activities; summary of existing information; and responses to the Project Information Questionnaire, SCE developed 13 Draft Technical Study Plans for consideration in the relicensing proceeding and included them in the PAD. The overall objective of the Draft Technical Study Plans is to address data gaps in existing information such that sufficient information is available to evaluate

potential Project effects and collaborate on the Proposed Project included in the License Application.

The Draft Technical Study Plans include the evaluation of existing resource conditions under ongoing routine operation and maintenance of the Project, and relevant information to support evaluation of potential protection, mitigation, and enhancement measures.

2.2 TECHNICAL WORKING GROUP MEETINGS

Following filing of the PAD, SCE convened a series of Technical Working Group meetings between June 28 and August 30, 2023 (Table 1) to review and refine the Draft Technical Study Plans, as appropriate. Technical Working Group meetings included presentations of each Draft Technical Study Plan and dialogue with participants to answer comments/questions and discuss/address refinement of the study approach and methodologies. Based on the stakeholder comments, SCE revised the Draft Technical Study Plans, as necessary, to address comments and prepared Updated Draft Technical Study Plans, which were submitted to FERC and distributed to meeting participants on August 23, 2023.

2.3 STAKEHOLDER STUDY REQUESTS

In response to FERC's Notice of Commencement of Proceeding, six comment letters were submitted by the deadline[1], four of which included study requests, as denoted by an asterisk:

- Neil Nikirk, July 11, 2023*
- Santa Rosa Indian Community of the Santa Rosa Rancheria, July 20, 2023
- U.S. Department of the Interior, National Park Service, August 31, 2023*
- State Water Resources Control Board, September 1, 2023*
- American Whitewater, September 5, 2023*
- Kern River Boaters, September 5, 2023

General comments on the PAD and SD1 are not addressed in this document; however, study requests filed with FERC are included in Appendix A. Stakeholder study requests and SCE's responses are presented in Table 2.

2.4 PROPOSED STUDY PLAN

Thirteen Technical Study Plans were included in the Revised Draft Technical Study Plans filed with FERC on August 23, 2023. Based on study requests filed with FERC, SCE revised the following four plans:

- AQ 1 – Hydrology

[1] The Santa Rosa Indian Community of the Santa Rosa Rancheria was contacted by FERC for comments on the PAD but had no comments, deferring to local Indian tribes. No additional comments or study requests were received. Kern River Boaters filed comments on the PAD that provided input on aesthetics, fishing, and boating but did not submit any study requests.

- AQ 2 – Water Quality/Water Temperature
- REC 2 _ Recreation Facility Use Assessment, and
- REC 3 – Whitewater Boating

All other Technical Study Plans remain unchanged from the Updated Technical Study Plans. The PSP for the Project relicensing includes the following Technical Study Plans listed by resource area and included in Appendix B of this document.

Aquatic Resources

- AQ 1 – Hydrology
- AQ 2 – Water Quality/Water Temperature
- AQ 3 – Fish Population

Cultural and Tribal Resources

- CUL 1 – Built Environment
- CUL 2 - Archaeology
- TRI 1 - Tribal

Land Resources

- LAND 1 – Road and Trail Condition Assessment
- LAND 2 – Erosion and Sedimentation

Recreation Resources

- REC 1 – Recreation Facility Condition Assessment
- REC 2 – Recreation Facility Use Assessment
- REC 3 – Whitewater Boating

Terrestrial Resources

- TERR 1 – Botanical
- TERR 2 – Wildlife

2.4.1. Content and Organization of Technical Study Plans

The following presents the general content and organization of the Technical Study Plans contained in Appendix B:

- Potential Resource Issues – This section identifies the environmental or cultural resource issues that are specifically addressed in the Technical Study Plans.
- Project Nexus – This section describes potential direct and indirect effects of Project operation and maintenance activities on environmental and cultural resources.

- Relevant Information – This section describes available information that was reviewed to determine resource study needs.
- Potential Information Gaps – This section identified information gaps that the study will fill.
- Study Objectives - This section describes the specific study objectives or goals of the study.
- Extent of Study Area – This section describes the specific area to be studied and clearly identifies the limits of the study area based on the potential Project Nexus.
- Study Approach – This section provides a detailed description of the study elements and methodologies proposed to meet each study objective.
- Reporting – This section identifies how the study methods and results will be documented and distributed to stakeholders.
- Schedule – This section presents a detailed schedule for implementation of each study including data collection and stakeholder consultation; data analysis and technical memo preparation; draft technical memo distribution; stakeholder review and comment period, comment resolution, and final technical memo distribution.

2.4.2. Other Technical Study Plan Components

The following sections describes three additional study plan components that apply to all the Technical Study Plans. These components are not addressed individually within each Technical Study Plan.

2.4.2.1. Relevant Resource Agency Jurisdiction/Management Goals

Table 3 identifies relevant resource agency jurisdiction/management goals related to the operation and maintenance of the Project. This list reflects the general content and range of management goals that may be under consideration for the Project relicensing. For each goal, a corresponding study plan(s) is identified which would result in the collection of sufficient information to adequately address resource agency management goals.

2.4.2.2. Consistency with Generally Accepted Practice in the Scientific Community

The study methodologies (including data collection and analysis techniques, field schedules, and study durations) identified in the PSP are consistent with generally accepted practice in the scientific community. The PSP was collaboratively developed with technical experts representing the licensee, Federal and state resource agencies, Native American tribes, non-government organizations and the public. Many of these technical experts have experience in multiple relicensing proceedings in California. The scope of each Technical Study Plan provided in Appendix B is consistent with common approaches used for other relicensing proceedings in California and the nation and, where appropriate, reference specific protocols and survey methodologies.

2.4.3. Consideration of Level of Effort and Cost

The overall objective of the Technical Study Plans contained in Appendix B is to develop sufficient information to identify potential Project effects and to develop new license conditions that reasonably balance multiple resource interests. The approach of each Technical Study Plan was evaluated first to verify that the desired information was focused on potential effects associated with the Project (i.e., Project Nexus), second to confirm that the information collected would substantially influence decisions on new license conditions (i.e., clear linkage between information obtained and decision process), and third to substantiate that the study approaches and resulting level of efforts were consistent with generally acceptable practices in the scientific community. The Technical Study Plans included in Appendix B meet these evaluation criteria. Table 4 presents the estimated level of effort and cost for completion of each Technical Study Plan.

3.0 PROPOSED STUDY PLAN MEETING

SCE will hold a virtual PSP meeting on November 14, 2023 with stakeholders to: (1) present SCE's PSP; (2) discuss information gathering or study requests from stakeholders; and (3) attempt to resolve any outstanding issues with respect to SCE's PSP. Meeting details are as follows:

Date:	November 14, 2023
Time:	1:00 – 3:00 pm
Meeting Link:	Provided in Teams Meeting Invitation (to be sent separately)
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The overall study plan development schedule is included in Table 5.

4.0 STUDY PLAN IMPLEMENTATION AND REPORTING

SCE has a well-defined process for the manner and extent information obtained during implementation of each Technical Study Plan will be provided to stakeholders. Each Technical Study Plan contains a detailed schedule for data collection and analysis, development and distribution of draft technical memos, and stakeholder review and comment. Table 6 provides an overview of these activities for each Technical Study Plan. In general, a 90-day comment period is provided for stakeholder review of each draft technical memo. An additional 60- to 90-day period has also been allocated in the schedule to resolve stakeholder comments on the draft technical memos and to develop and distribute the final technical memos.

In addition to formal distribution of draft and final technical memos, SCE will also present an overview of the content and key findings of each technical memo to stakeholders during regularly scheduled technical meetings. The timing of these meetings will be e-mailed to stakeholders in advance and posted on SCE's relicensing website www.sce.com/kr1.

5.0 INITIAL AND UPDATED STUDY REPORTS AND MEETINGS

During study implementation, SCE will file an Initial and Updated Study Report (approximately March 2025 and 2026, respectively) with FERC describing overall progress in implementation of the Technical Study Plans including data collected to date, any deviations in technical approaches or schedules, and a proposed schedule for completion of the remaining study plan components. The Initial and Updated Study Reports will also include a description of any proposed modifications to the approved studies or new studies proposed by SCE.

Within 15 days following filing of the Initial and Updated Study Reports, SCE will hold a meeting with stakeholders to discuss the study results and SCE's or other participant's proposals, if any, to modify the PSP. Within 15 days following each meeting, SCE will file a meeting summary, including any modification to ongoing studies or new studies proposed by SCE and the rationale for not adopting any stakeholder requests, if applicable. The timing of these activities will be e-mailed to stakeholders in advance and posted on SCE's relicensing website at www.sce.com/kr1.

TABLES

Table 1. Technical Working Group Meeting Schedule

Technical Study Plan	Week Starting										
	26-June	3-July	10-July	17-July	24-July	31-July	7-Aug	14-Aug	21-Aug	28-Aug	4-Sep
Aquatic Resources											
AQ 1 – Hydrology		July 7 10 am- 12 pm				July 31 1-3 pm					
AQ 2 – Water Quality/Water Temperature											
AQ 3 – Fish Population											
Cultural Resources											
CUL 1 – Built Environment	June 29 1-3 pm				July 27 1-3 pm				Aug 22 1-3 pm		
CUL 2 – Archaeology											
TRI 1 – Tribal											
Land Resources											
LAND 1 – Road and Trail Condition Assessment	June 28 1-3 pm				July 26 1-3 pm				Aug 23 1-3 pm		
LAND 2 – Erosion and Sedimentation											
Recreation Resources											
REC 1 – Recreation Facility Condition Assessment			July 12 1-3 pm				Aug 10 1-3 pm			Aug 30 1-3 pm	
REC 2 – Recreation Facility Use Assessment											
REC 3 – Whitewater Boating											
Terrestrial Resources											
TERR 1 – Botanical			July 11 1-3 pm					Aug 15 1-3 pm			
TERR 2 – Wildlife											
	TWG #1			**TWG #2**					**TWG #3***		

* Contingency meeting if needed.

The proposed meeting schedule could be modified based on stakeholder interest and participation.

Table 2. Stakeholder Study Requests and Associated SCE Responses

Study Request	SCE Response
Neil Nikirk **Request Filed: July 11, 2023**	
Draft AQ 1 – Hydrology **The hydrology model should include water availability and changes in hydrology in light of the effects of climate change on the source of water – North Fork and South Fork Kern River and Lake Isabella.**	**Response Nikirk-1**: The Draft AQ-1 – Hydrology Technical Study Plan already incorporates the use historical inflow hydrology to characterize water availability over the Period of Record (POR) (1998-2021). SCE does not propose to independently model the effect of climate change on inflow hydrology (see Rationale below). If climate change modeling for Lake Isabella releases (inflow to the Kern No. 1 Project) is available over the Kern No. 1 POR then this existing data will be incorporated into the Project hydrology model. Refer to Appendix B for the Technical Study Plan. Rationale: SCE does not propose to independently model climate change effect of Kern River hydrology for the following reasons: Inflow hydrology to the Kern River No.1 Project is totally controlled by upstream operations of Lake Isabella by the Army Corps of Engineers (ACOE) and flow releases schedules developed by the Kern River Water Master. • SCE does manage storage in Lake Isabella or subsequent releases and, therefore, has no control over Project inflow. • Future operations of Lake Isabella by ACOE and flow releases schedules developed by the Kern River Water Master under climate change hydrology is unknown..
Santa Rosa Indian Community of the Santa Rosa Rancheria **Comment Filed: July 20, 2023**	
Cultural Director Shana Powers commented that unless there would be further downstream effects from the Project, the Community would defer to more local Indian tribes.	No study request comments were received.
U.S. Department of the Interior, National Park Service **Request Filed: August 31, 2023**	
Updated Draft REC 2 – Recreation Facility Use Assessment Extent of Technical Study Area – In addition to the developed site and select Project trails, the Study sites should include dispersed sites where visitors access undeveloped areas along the bypass reach. Study sites should be determined by the Recreation Technical Working Group with the option to further modify, if warranted.	**Response NPS-1:** SCE has modified the TSP to include characterization of recreation use at undeveloped sites along the bypass reach accessible from SR 178. SCE will consult with the Recreation Technical Working Group to identify undeveloped recreation sites along the bypass reach that should be included in the study.
Technical Study Approach – In addition to interviewing personnel from the Sequoia National Forest, SCE, and consultants to obtain information on trail use (intensity, types and season of use, access, safety concerns, etc.,), individuals affiliated with the Kern Gateway Trail project and other community members should be interviewed or invited to participate in focus groups to solicit their input. Such groups could also assist in survey development, including assistance in drafting survey questions and suggesting survey and trail counter locations.	**Response NPS-2:** SCE has modified the TSP to specify that other interested stakeholders identified by the Recreation TWG such as active Kern Gateway Trail team members will also be consulted.
The proposed Technical Study would not include data on trail users during December and January. NPS recommends the study be continuously conducted throughout the year.	**Response NPS-3:** SCE has modified the TSP to specify data will be collected for a full year.
NPS recommends an option to complete paper self-survey forms and submit them in drop boxes. Survey by QR code has limitations due to unreliability of cellular reception in the Kern River Canyon while hiking.	**Response NPS-4:** SCE has modified the TSP to specify the use of physical tamper-proof survey boxes to collect user data along the six Project trails identified for study in the TSP. These physical boxes will be used in place of prior suggested data collection methods involving QR codes and trail cameras.
The Technical Study should also include random, in-person surveys throughout the study period to improve the reliability of the overall study.	Response NPS-5: SCE has modified the TSP to include random in-person intercept surveys. These surveys would be conducted at the same time as the vehicle counts and rely on standardized intercept survey forms designed to clarify and characterize recreation use and gather information about user experience – including aesthetic experience. The intercept forms will be designed with questions for two user groups: day users and whitewater boaters. SCE will consult with the Recreation TWG to finalize the questions in the intercept survey forms.

Study Request	SCE Response
State Water Resources Control Board Request Filed: September 1, 2023	
Draft AQ 2 – Water Quality/Temperature Staff request the Technical Study Plan include an additional data collection site below Democrat Dam, but above the sandbox outflow.	**Response SWB-1**: In response to the State Water Board request, SCE revised the AQ 2 – Water Quality/Temperature Technical Study Plan to include a data collection site below Democrat Dam, but above the sandbox outflow (instream flow release site). Refer to Appendix B for the Technical Study Plan.
Staff request water column metals sampling, including but not limited to mercury, methylmercury, and arsenic of the Project Impoundment be included in the Technical Study Plan.	**Response SWB-2**: In response to the State Water Board request, SCE revised the AQ 2 – Water Quality/Temperature Technical Study Plan to include heavy metal sampling. Refer to Appendix B for Technical Study Plan.
The Technical Study Plan proposes one year of data collection. Staff believe one year of data collection is not adequate to evaluate the Project's potential impacts as its operations could span a 50-year term. Staff request the Technical Study Plan continues data collections for a minimum of two years.	**Response SWB-3**: In response to the State Water Board request, SCE revised the AQ 2 – Water Quality/Temperature Technical Study Plan to conduct data collection for two years. Refer to Appendix B for the Technical Study Plan.
Study Plan Request Staff request a Methylmercury Fish Tissue Sampling Study be conducted as part of the relicensing**.** This study should run for two consecutive water-years.	**Response SWB-4**: In response to the State Water Board request, SCE revised the AQ 2 – Water Quality/Temperature Technical Study Plan to include mercury fish tissue sampling for one year. SCE did not include two years of fish tissue sampling (see Rationale below). Refer to Appendix B for the Technical Study Plan. Rationale: SCE's proposed fish tissue sampling (one year) documents accumulation of mercury over time by species, with older fish representing multiple years of exposure. A second year of sampling does not provide any additional data rather it adds to the study costs related to field collection of fish and processing of tissue samples.
American Whitewater Request Filed: September 5, 2023	
Updated Draft REC 2 – Recreation Facility Use Assessment American Whitewater supports National Park Service's requests for enhanced sampling in the REC-2 Recreation Facility Use Assessment. Key improvements include a need for: Physical self-survey forms available at both developed and undeveloped access points within the Project-affected reach. Drop boxes for these self-survey forms should be routinely checked for condition and should be designed to be tamper-proof and durable. SCE and contractors should work with Sequoia National Forest District Recreation staff to identify sites and tamper proof Installation methodology for these drop boxes.	**Response AWW-1:** Refer to NPS-4 response.
Enhanced seasonality to include December and January.	**Response AWW-2:** Refer to NPS-3 response.
In-person survey methodology that includes at least English and Spanish-speaking surveyors throughout the study period.	**Response AWW-3:** Refer to NPS-5 response.

Study Request	SCE Response
Focus groups should be organized that bring together interested users and keep them informed throughout the study development and conduct process. Agency staff, recreation community members, and recreation nonprofits should be included.	**Response AWW-4:** The REC-2 TSP was developed via consultation with stakeholders from multiple agencies and organizations, collectively referred to as the Recreation Technical Working Group (Recreation TWG). These stakeholders included the National Park Service, Forest Service, State Water Board, American Whitewater, representatives from the Kern Gateway Trail team, and others. The REC 2 TSP has been modified to include additional requirements for consultation and outreach during implementation of the TSP including: Consulting with the Recreation TWG to identify locations along SR 178 used to access the river. Consultation with the Recreation TWG to finalize the questions in the intercept survey forms. Consultation (interviews) with SQF recreation planners and other interested stakeholders identified by the Recreation TWG (such as active Kern Gateway Trail team members) to learn more about existing use of Project Trails.
Undeveloped access points should be surveyed, where possible and safe, throughout the Study. Key access points to survey and appropriate methodology could be identified through stakeholder and user input and focus groups.	**Response AWW-5:** Refer to NPS-1 and NPS-5 response.
Updated Draft REC 3 – Whitewater Boating American Whitewater appreciates the opportunity to provide feedback on the REC-3 Whitewater Boating Technical Study. To accurately capture whitewater boating use, it should include opportunities for stakeholder review, input, and adjustment at each Level of technical study.	**Response AWW-6:** SCE has included opportunities for stakeholder input at each Level of the technical study as follows: Level 1: • SCE will work with the whitewater boating community to identify individuals with whom to conduct structured interviews. Individuals nominated for interviews by the whitewater boating community will represent a range of watercraft, skill levels, and knowledge of the whitewater boating runs in the bypass reach. • SCE will consult with resource agencies and the whitewater boating community to determine whether Level 2 Limited reconnaissance is necessary based on the information obtained during the Level 1 investigation. Level 2: • SCE will conduct a site visit for direct observation of the whitewater boating run with a group of study participants consisting of agency staff and boaters nominated by the whitewater boating community. • SCE will consult with resource agencies and the whitewater boating community to determine whether a Level 3 On-water Boating Assessment is based on the information obtained during the Level 1 and 2 investigations. Level 3: • SCE will collect flow preference information directly from whitewater boaters for a variety of watercraft for the bypass reach using a single flow survey and a whitewater flow comparison survey, and potentially, a controlled flow study. • SCE has modified the REC-3 TSP to include the placement of temporary tamper-proof self-survey boxes at whitewater boater put-in and take-out locations along the bypass reach. • Locations for placement of the boxes will be determined in consultation with the boating community. • SCE will also reach out to the whitewater boating community to inform the community in advance of when hydrologic conditions are within boatable flow ranges. SCE will organize a whitewater focus group designed to gather additional information from boaters with direct experience on the bypass reach. The focus group will include representation across watercraft types.
“Project Facility Capabilities” should fully articulate the capabilities of the project facilities to be determined are, with relation to prospective future recreation releases, conveyance dewatering, ramp time (including any ecological constraints).	**Response AWW-7:** SCE modified the REC-3 language to specify that capabilities will be articulated with reference to prospective future project, conveyance dewatering, and ramp time.

Study Request	SCE Response
It is not clear that a controlled flow study is not possible and also not necessary. Although it might be the case that Levels 1 & 2 of the REC-3 study indicate a need for a controlled flow study at particular flow ranges that can be targeted in a controlled flow study. As such, we suggest that SCE modifies the Level 3 portion of the study to more accurately reflect the open-ended nature of the Whittaker methodology and to leave the option for a controlled flow study open as part of that paper's established methodology.	**Response AWW-8:** SCE modified REC-3 to note that the need for and feasibility of conducting a controlled flow study as part of the Level 3 assessment will be evaluated in consultation with resource agencies and the whitewater boating community. The REC-3 TSP now includes details describing the parameters of a controlled flow study for the Project if one is undertaken.
It should be clear that Level 3 of the Technical Study will be conducted in a temporally stepwise fashion, following Levels 1 & 2, and with opportunity for stakeholder review, input, and refinement.	**Response AWW-9:** As indicated in the TSP, the study approach generally follows the methods identified in Flows and Recreation: A Guide to Studies for River Professionals (Whittaker et al., 2005). The 2005 publication outlines a sequential framework to investigate flow dependent whitewater boating opportunities using various investigative tools across three progressive levels of study. SCE will consult with resource agencies and the whitewater boating community to determine whether a Level 3 On-water Boating Assessment is needed based on the information obtained during the Level 1 and 2 investigations. Refer to Response AWW-6, for a description stakeholder input opportunities at each Level of the technical study.
It is not clear that QR codes are likely to reach all users within the reach. Similar to REC-2 Technical Study conduct above, physical survey forms and tamper-proof drop boxes should be installed as broadly as possible within the reach and stocked for all survey methodologies where self-survey is indicated.	**Response AWW-10:** SCE has modified the REC-3 TSP to include the placement of tamper-proof self-survey boxes at whitewater boater put-in and take-out locations along the bypass reach as part of the Level 3 On-water Boating Assessment study effort. The short self-survey forms within the survey boxes will include both the whitewater single flow survey form and the whitewater flow comparison survey form. These physical forms will be in addition to the online survey forms available for access via posted QR codes.
The Technical Study Plan should clearly articulate stakeholder notification and discussion of changes or modifications to study methodology during study conduct. Although such changes might become necessary during actual conduct of the studies, stakeholders need to be made aware of any changes with opportunity for collaborative study adjustment in real time.	**Response AWW-11:** SCE has included opportunities for stakeholder input at each Level of the technical study. Please see response to AWW-6. As specified in that response stakeholders will be consulted at points during implementation of each of study sequence and will also be consulted to determine whether and when the next Level of study is needed to achieve the study objectives.
Kern River Boaters **Request Filed: September 5, 2023**	
Study aesthetics, not with easily manipulated survey data but with a science-based controlled flow study.	**Response KRB-1:** SCE has modified the REC-2 TSP to include random in-person intercept surveys of day users and whitewater boaters. Standardized intercept survey forms will be designed to clarify and characterize recreation use and gather information about user experience – including aesthetic experience. In addition, SCE has modified the REC-3 TSP to include the placement of tamper-proof self-survey boxes at whitewater boater put-in and take-out locations along the bypass reach as part of Level 3: On-water Boating Assessment (Level 3 will only be triggered if stakeholders determine information beyond that gathered during the Level 1 Desktop Review and Level 2 Limited Reconnaissance is necessary). The short self-survey forms within the survey boxes will be designed to collect information from whitewater boaters about their user experience – including their aesthetic experience.

Table 3. Relevant Resource Agency Jurisdiction/Management Goals

Agency	Resource Agency Jurisdiction/Management Goals	AQ-1 Hydrology	AQ 2 - Water Quality/Water Temperature	AQ 3 - Fish Population	CUL 1 – Built Environment	CUL 2 – Archaeological Resources	TRI 1 – Tribal Resources	LAND 1 – Road and Trail Condition Assessment	LAND 2 – Erosion and Sedimentation	REC 1 - Recreation Facility Condition Assessment	REC 2 - Recreation Facility Use Assessment	REC 3 - Whitewater Boating	TER-1 Botanical Resources	TERR-2 Wildlife Resources
California Department of Fish and Wildlife	In the State of California, fish and wildlife resources are held in trust for the people of the state, and the California Department of Fish and Wildlife (CDFW) has statutory responsibility for managing and protecting all fish, wildlife, and habitat to support these species in the public interest (Cal. Fish and Game Code § 711.7). The CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Cal. Fish and Game Code § 1802).	X	X	X					X				X	X
California Office of Historic Preservation	The California Office of Historic Preservation (OHP) is charged with ensuring that projects and programs carried out or sponsored by federal and state agencies comply with federal and state historic preservation laws and that projects are planned in ways that avoid or minimize adverse effects to heritage resources. Federal and federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the National Historic Preservation Act (NHPA). Section 106 of the NHPA, as amended, requires federal agencies to consider the effects of proposed federal undertakings on historic properties. The NHPA's implementing regulations found in 36 CFR Part 800, require federal agencies (and their designees, permitees, licensees, or grantees) to initiate consultation with the State Historic Preservation Officer (SHPO) as part of the Section 106 review process.				X	X	X							
National Park Service	The National Park Service (NPS) has authority to consult with FERC and applicants concerning a Project's effects on outdoor recreation resources under the Federal Power Act (18 CFR 4.38(a), 5.41 (f)(4)-(6), and 16.8(a)); the Outdoor Recreation Act (Public Law [PL] 88-29); the National Park Service Organic Act (39 Stat. 535); and the Wild and Scenic Rivers Act (PL 90-542). It is the policy of the NPS to represent the national interest regarding recreation, and to assure that hydroelectric projects subject to relicensing recognize the full potential for meeting present and future public outdoor recreation demands, while maintaining and enhancing a quality environmental setting for those projects. Investigating opportunities to improve the recreation experience is consistent with NPS policy and FERC guidelines to identify future potential recreation needs.									X	X	X		

Agency	Resource Agency Jurisdiction/Management Goals	AQ-1 Hydrology	AQ 2 - Water Quality/Water Temperature	AQ 3 - Fish Population	CUL 1 – Built Environment	CUL 2 – Archaeological Resources	TRI 1 – Tribal Resources	LAND 1 – Road and Trail Condition Assessment	LAND 2 – Erosion and Sedimentation	REC 1 - Recreation Facility Condition Assessment	REC 2 - Recreation Facility Use Assessment	REC 3 - Whitewater Boating	TER-1 Botanical Resources	TERR-2 Wildlife Resources
State Water Resources Control Board	Before FERC can issue a new license, the Licensee must obtain water quality certification from the State Water Board pursuant to Section 401(a)(1) of the federal Clean Water Act (CWA) (33 U.S.C. § 1341 (a)(1)). Section 401 of the CWA requires any applicant for a federal license or permit, which may result in any discharge to navigable waters, to obtain water quality certification from the State Water Board that the discharge will comply with the applicable provisions of section 301, 302, 303, 306, and 307 of the CWA. Under Section 303 of the CWA and under the Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board adopted, and the State Water Board and United States Environmental Protection Agency (USEPA) approved, the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan). The Basin Plan designated beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. The Basin Plan identified the following beneficial uses for the Kaweah River, upstream of Lake Kaweah: municipal and domestic supply; power, contact recreation; non-contact recreation; warm freshwater habitat; cold freshwater habitat, wildlife habitat; rare, threatened, or endangered species; spawning, reproduction, and/or early development; and freshwater replenishment. These beneficial uses also apply to the tributaries of the Kaweah River.	X	X	X			X		X			X		
U.S. Fish and Wildlife Service	The U.S. Fish and Wildlife Service (USFWS) has adopted an ecosystem approach to fish and wildlife resource conservation. This approach requires protecting or restoring the function, structure, and species composition of an ecosystem while providing for its sustainable socioeconomic uses. The USFWS's overall goal is to restore and protect fish and wildlife resources. Included in the ecosystem approach is conservation of ecosystems that support species listed under the Endangered Species Act (ESA).	X	X	X					X			X	X	X

Notes:
CDFW = California Department of Fish and Wildlife
CWA = Clean Water Act
ESA = Endangered Species Act
FERC = Federal Energy Regulatory Commission
NHPA = National Historic Preservation Act
NPS = National Park Service
OHP = Office of Historic Preservation
PL = Public Law
SHPO = State Historic Preservation Officer
USEPA = U.S. Environmental Protection Agency
USFWS = U.S. Fish and Wildlife Service

Table 4. Level of Effort and Cost for Completing the PSP

Technical Study Plan	Total Estimated Cost	Total Level of Effort (Labor Hours)
Aquatic Resources		
AQ 1 - Hydrology	$144,000	755
AQ 2 - Water Quality/Water Temperature	$443,000	2,349
AQ 3 - Fish Population	$224,000	1,186
Total	**$811,000**	**4,290**
Cultural and Tribal Resources		
CUL 1 – Built Environment	$47,000	315
CUL 2 – Archaeological Resources	$112,000	870
TRI 1 – Tribal Resources	$147,000	1,073
Total	**$306,000**	**2,258**
Land Resources		
LAND 1 – Road and Trail Condition Assessment	$63,000	344
LAND 2 – Erosion and Sedimentation	$73,000	399
Total	**$136,000**	**743**
Recreation Resources		
REC 1 – Recreation Facility Condition Assessment	$44,000	359
REC 2 - Recreation Facility Use Assessment	$234,000	1,756
REC 3 – Whitewater Boating	$136,000	711
Total	**$414,000**	**2,286**
Terrestrial Resources		
TERR-1 Botanical Resources	$235,000	1,261
TERR-2 Wildlife Resources	$283,000	1,701
Total	**$518,000**	**2,962**
Project Total	**$2,185,000**	**12,539**

Table 5. FERC's Study Plan Development Schedule

Responsible Entity	Milestone	Date	FERC Regulation
SCE	File Proposed Study Plan	10/17/2023	5.11(a)
All Stakeholders	Study Plan Meeting	11/16/2023	5.11(c)
All Stakeholders	File Comments on SCE's Proposed Study Plan Due	1/15/2024	5.12
SCE	File Revised Study Plan	2/14/2024	5.13(a)
All Stakeholders	File Comments on SCE's Revised Study Plan	2/19/2024	5.13(b)
FERC	Issue Study Plan Determination	3/15/2024	5.13(c)
Mandatory Conditioning Agencies	File Any Study Disputes	4/4/2024	5.14(a)
Dispute Panel	Select Third Dispute Resolution Panel Member	4/19/2024	5.14(d)
Dispute Panel	Convene Dispute Resolution Panel	4/24/2024	5.14(d)(3)
SCE	File Comments on Study Disputes	4/29/2024	5.14(i)
Dispute Panel	Dispute Resolution Panel Technical Conference	5/4/2024	5.14(j)
Dispute Panel	Issue Dispute Resolution Panel Findings	5/24/2024	5.14(k)
FERC	Issue Director's Study Dispute Determination	6/13/2024	5.14(l)

Table 6. Technical Study Plan Implementation Schedule

Technical Study Plan	2024												2025												2026											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
AQ 1- Hydrology																																				
Collaborate with stakeholders on the approach for refining the hydrology, as appropriate, and developing Project Operations Model																																				
Refine the Project hydrology and associated operations model																																				
Complete the hydrologic alteration analysis																																				
Prepare Draft Technical Memo																																				
Distribute Draft Technical Memo to stakeholders																																				
Stakeholder review and comment period																																				
Resolve Comments/Prepare Final Technical Memo																																				
Distribute Final Technical Memo in Draft License Application																																				
AQ 2 – Water Quality/Water Temperature																																				
Install water temperature probes and conduct spring water quality *in-situ* and grab sampling																																				
Maintain water temperature probes																																				
Conduct bacteria sampling at four day-use recreation areas																																				
Conduct summer/fall water quality *in-situ* and grab sampling																																				
Analyze Data/Prepare Draft Technical Memos (Year 1 and Year 2 results)																																				
Distribute Draft Technical Memos to stakeholders (Year 1 and Year 2)																																				
Stakeholder review and comment periods (Year 1 and Year 2)																																				
Resolve Comments/Prepare Final Technical Memos (Year 1 and Year 2)																																				
Distribute Final Memos (Year 1 – Draft License Application and Year 2 – Final License Application)																																				
AQ 3 – Fish Population																																				
Select fish population sampling sites in collaboration with interested resource agencies																																				
Conduct quantitative/qualitative fish sampling																																				
Analyze Data/Prepare Draft Technical Memo																																				
Distribute Draft Technical Memo to stakeholders																																				
Stakeholder review and comment period																																				
Resolve Comments/Prepare Final Technical Memo																																				
Distribute Final Technical Memo in Draft License Application																																				
CUL 1 – Built Environment																																				
Archival Research																																				
Fieldwork																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Develop Draft HPMP																																				
Distribute Final Memo																																				
CUL 2 – Archaeology																																				
Archival Research																																				
Fieldwork																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Develop Draft HPMP																																				
Distribute Final Memo																																				
TRI 1 – Tribal																																				
Archival Research																																				

Technical Study Plan	2024												2025												2026											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Engage Tribal groups																																				
Tribal Interviews																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Develop Draft HPMP																																				
Distribute Final Memo																																				
LAND 1 – Road and Trail Condition Assessment																																				
Conduct desktop reconnaissance and field surveys																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Distribute Final Memo																																				
LAND 2 – Erosion and Sedimentation																																				
Initiate desktop review and field surveys																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Distribute Final Memo																																				
REC 1 – Recreation Facility Condition Assessment																																				
Develop facility inventory and condition assessment forms in consultation with the SQF																																				
Conduct the facility inventory and condition assessment																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Distribute Final Memo																																				
REC 2 – Recreation Facility Use Assessment																																				
Consult with the Recreation TWG to (1) identify locations along the bypass reach accessible from SR 178 used for dispersed recreation, and (2) to finalize questions in the intercept survey forms.																																				
Acquire and review key information sources to characterize recreation use in the Project vicinity (i.e., Forest Service recreation planners, concessionaire, stakeholders identified by the Recreation TWG, and existing data files and reports).																																				
Install temporary tamper-proof survey boxes at obvious location along each of the trails of focus.																																				
Conduct vehicle counts and opportunistic in-person intercept surveys.																																				
Analyze data and prepare draft technical memo.																																				
Distribute draft technical memo to stakeholders																																				
Stakeholders review and provide comments on draft technical memo (90 days).																																				
Incorporate results from the self-survey boxes into revised draft technical memo.																																				
Distribute revised draft technical memo to stakeholders																																				
Stakeholders review and provide comments on revised draft technical memo (60 days).																																				
Resolve comments and prepare final technical memo																																				
Distribute Final Memo in Draft License Application																																				
REC 3 – Whitewater Boating																																				

Technical Study Plan	2024												2025												2026											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Conduct Level 1 Desktop Study																																				
Complete Level 2 Limited Reconnaissance																																				
Analyze data and prepare draft technical memo (Level 1 and Level 2)																																				
Distribute draft technical memo to stakeholders.																																				
Stakeholders review and provide comments on draft technical memo (90 days)																																				
Determine, in consultation with resource agencies and whitewater community, whether a Level 3 On-water Boating Assessment is needed																																				
Resolve comments and prepare draft final technical memo (Level 1 and Level 2)																																				
If necessary, conduct Level 3 On-water Boating Assessment (Whitewater Focus Group and single flow or controlled flow study)																																				
Place temporary tamper-proof self-survey boxes at whitewater boater put-in and take-out locations along the bypass reach for single flow study																																				
Incorporate results from the Level 3 Assessment into final technical memo																																				
Distribute Final Memo in the Draft License Application for stakeholder review																																				
TERR 1 – Botanical Resources																																				
Conduct Ground-Truthing of Vegetation Alliances																																				
Conduct Botanical Surveys																																				
Characterize Riparian Vegetation in the Bypass Reach																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Distribute Final Memo																																				
TERR 2 – Wildlife Resources																																				
Conduct Wildlife Reconnaissance Surveys																																				
Conduct Special-Status Bat Reproductive Surveys																																				
Conduct Special-Status Bat Seasonal Use Surveys																																				
Conduct Special-Status Salamander Habitat Assessment																																				
Conduct Special-Status Salamander VES following rain events																																				
Analyze Data/Prepare Draft Memo																																				
Distribute Draft Memo																																				
Stakeholder Review																																				
Resolve Comments/Prepare Final Memo																																				
Distribute Final Memo																																				

APPENDIX A

Stakeholder Study Requests

U.S. Department of the Interior

National Park Service

United States Department of the Interior

NATIONAL PARK SERVICE
Interior Regions 8, 9, 10, and 12
555 Battery Street, Suite 122
San Francisco, CA 94111

IN REPLY REFER TO:
PW-PPR (1.D.)

The Honorable Kimberly D. Bose
Secretary Federal Energy Regulatory Commission 888 First Street, N.E. Room 1A
Washington, D.C. 20426

Dear Secretary Bose:

Thank you for the opportunity to review the Scoping Document 1 (SD-1) and the Pre- Application Document (PAD) for the Kern River No. 1 Hydroelectric Project (P-1930) filed by Southern California Edison Company (SCE) on May 5, 2023, and the Updated Draft Technical Study Plans filed by SCE on August 23, 2023. The National Park Service (NPS) provides comments on both sets of documents through its authority under the Federal Power Act (18 CFR 4.38(a), 5.41(f)(4)-(6), and 16.8(a)); the Outdoor Recreation Act (Pub Law 88-29), and the NPS Organic Act (39 Stat. 535). In this role, the NPS consults with the Federal Energy Regulatory Commission (FERC) and applicants concerning a project's effects on outdoor recreation resources.

It is the policy of the NPS to represent the national interest regarding recreation and to assure that hydroelectric projects subject to relicensing incorporate the full potential for meeting present and future public outdoor recreation demands while maintaining and enhancing a quality environmental setting for those projects. Investigating opportunities to improve the recreation experience is consistent with NPS policy and FERC guidelines to identify potential future recreation needs.

The NPS submits the following comments on the SD-1 and the PAD for the Kern River No. 1 Hydropower Project, which will be further referred to as the "Project."

SD-1

Section 4.2.6. Recreation Resources

On page 21, the SD-1 identifies environmental issues related to recreation resources to be addressed in the NEPA document as follows:

- *Effects of continued project operation and maintenance on recreation resources.*
- *Adequacy of existing recreation facilities to meet current and future recreation demand.*
- *Effects of project operation and maintenance on recreational white water boating use in the project bypassed reach.*

In addition to the above three recreation issues, the Scoping Document should address recreation access. Apart from the developed recreation sites, recreation users access the Project area at various points or pull-offs along State Route 178, which runs through the Kern River Canyon.

Visitors use these areas to access the river for recreation purposes (e.g., boating, fishing, swimming) or to access trails above the river for hiking. Some of these access points may present safety concerns due to the narrowness of the Kern River Canyon and highway traffic, which should be addressed in the NEPA document.

PAD, Volume I

Section 3.11.7.1. National Wild and Scenic River System

On page 3.11-11, the PAD recognizes that the Forest Service identified the Lower Kern River from Lake Isabella 31 miles downstream to the canyon mouth above Bakersfield as meeting the Wild and Scenic River eligibility requirements. The section of the Lower Kern River from Lake Isabella Dam, 21 miles downstream to Democrat Dam, is also listed on the Nationwide Rivers Inventory (NRI), with identified recreational, scenic, and wildlife outstandingly remarkable value and a "Scenic" tentative classification. The NRI is listed as a comprehensive plan by FERC that needs to be considered under FPA Section 10(a)(2) and is included in the PAD in Section 4.4. Relevant Qualifying Federal and State Comprehensive Plans.

The NRI is a listing of more than 3,200 free-flowing river segments in the United States that are considered to meet eligibility criteria for the National Wild and Scenic Rivers System. Based on preliminary studies, these river segments were found to possess one or more "outstandingly remarkable" natural or cultural values judged to be at least regionally significant. The NPS is responsible for maintaining the NRI. Under Section 5(d)(1) of the Wild and Scenic Rivers Act and related guidance, all federal agencies must seek to avoid or mitigate actions that would adversely affect NRI river segments. The NPS's role in licensing when an NRI river is involved includes an interest in protecting the free-flow condition, water quality, and the potential outstandingly remarkable values identified in the NRI.

Section 3.11.4. Recreation Opportunities

This section of the PAD focuses on stream-side recreation opportunities within the Project vicinity, including picnicking, swimming, wading, fishing, and whitewater boating. Hiking also occurs in the Project vicinity, including on Project trails, although access is limited. There is currently a community-led effort to make hiking the Kern River Canyon more accessible by developing the Kern Gateway Trail on the south side of the canyon, from the canyon mouth to Democrat Dam. This proposed trail system would incorporate the use of some Project trails and would meet current demand for developed trails in the Bakersfield area. The NPS Rivers, Trails, and Conservation Assistance (RTCA) program is assisting the community group with the trail concept.

Updated Draft Technical Study Plans

Draft technical study plans were provided in Appendix C of the PAD when it was filed on May 5, 2023. On August 23, 2023, SCE filed updated draft technical study plans. The NPS provides the following comments on one of the updated draft technical study plans.

Updated Draft REC 2 – Recreation Facility Use Assessment Technical Study Plan

Potential Information Gaps and Study Objectives

The NPS supports the decision to identify recreation use of Project trails a potential information gap and include characterization of recreation use along Project trails as an objective of the study.

Extent of Study Area

In addition to the developed sites and select Project trails, the study sites should include dispersed sites where visitors access undeveloped areas along the bypass reach to recreate. Study sites should be determined by the Recreation Technical Working Group with the option to further modify study sites, if warranted.

Study Approach

Characterize recreation use at select project trails.

- In addition to interviewing Sequoia National Forest recreation planners and SCE personnel and consultants to obtain information on trail use (e.g., intensity, types and season of use, access, safety concerns, etc.), individuals affiliated with the Kern Gateway Trail project and other community members should also be interviewed or be invited to participate in focus groups to solicit their insights on trail use, needs, and demand. Such groups could also assist in trail user survey development, including providing assistance in drafting survey questions and suggesting appropriate survey and trail counter locations.
- The proposed study would not collect data on trail users during December and January. Considering that the Kern River Canyon is located near Bakersfield, with average winter daytime temperatures in the 60s, the winter months may receive some of the highest trail use. The NPS recommends that the study be continuously conducted throughout the year.
- The NPS recommends an option for hikers to complete paper self-survey forms and submit them in drop boxes. Survey by QR code has several limitations: the unreliability of cellular communications reception in the Kern River Canyon; the likely limited response by hikers photographing the QR code while in the canyon, then responding to the survey later; and the probability of people not having smart phones while hiking.
- In addition to self-surveys and trail counters, the study should also include random, in-person surveys throughout the study period to improve the reliability of the overall study.

Thank you for the opportunity to comment on Scoping Document 1 and the Pre-Application Document for the Kern River No. 1 Hydroelectric Project. For questions, please contact Barbara Rice (barbara_rice@nps.gov) or Lilian Jonas (lilian_jonas@contractor.nps.gov).

Sincerely,

Anna Tamura
Acting Program Manager
Park Planning & Environmental Compliance
National Park Service, Interior Regions 8, 9, 10 & 12

State Water Resources Control Board

Mr. Wayne Allen
Southern California Edison
1515 Walnut Grove Avenue
Rosemead, CA 91770
Wayne.Allen@sce.com

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426
Via e-filing

Kern River No. 1 Hydroelectric Project
Federal Energy Regulatory Commission Project No. 1930
Kern County
Kern River

STUDY REQUESTS AND COMMENTS ON THE PRE-APPLICATION DOCUMENT COMMENTS AND SCOPING DOCUMENT 1

Dear Mr. Allen and Secretary Bose:

State Water Resources Control Board (State Water Board) staff hereby submits the enclosed comments and study request pertaining to the Pre-Application Document (PAD) filed by Southern California Edison (SCE) for the Kern River No. 1 Hydroelectric Project (Project), also referred to as Federal Energy Regulatory Commission (FERC) Project No. 1930. The comments and study request are provided in two attachments: *Attachment A: Comments on Pre-Application Document for Kern River No. 1 Hydroelectric Project* and *Attachment B: Study Plan Request for Kern River No. 1 Hydroelectric Project.* State Water Board staff have no comments on FERC's Scoping Document 1 for the Project.

SCE owns and operates the Project. The Project was originally licensed by FERC in 1998 on a 30-year term license that expires in 2028.

On May 5, 2023, SCE filed its PAD with FERC for relicensing of the Project. On June 29, 2023, FERC issued notice of SCE's PAD filing and Scoping Document 1. On August 3, 2023, State Water Board staff attended an in-person public meeting hosted by FERC to discuss the Project relicensing and information contained in the PAD. The public meeting began a 30-day comment period in which interested parties could submit comments on the Project's PAD and request additional studies as well as comment on FERC's Scoping Document.

Wayne Allen
Secretary Bose

September 1, 2023

The State Water Board's study plan request discusses the six criteria specified by FERC in the Code of Federal Regulations, title 18, section 5.9(b).

If you have questions regarding this letter please contact Garrett Long, Project Manager, by email at garrett.long@waterboards.ca.gov. Written correspondence should be directed to:

State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
Attn: Garrett Long
P.O. Box 2000
Sacramento, CA 95812-2000

Sincerely,

Garrett Long

Garrett Long – Water Resources Control Engineer
Water Quality Certification Program
Division of Water Rights

Attachments:

Attachment A: Comments on Pre-Application Document for Kern River No. 1 Hydroelectric Project

Attachment B: Study Plan Request for Kern River No. 1 Hydroelectric Project

ec:
Ms. Kimberly D. Bose,
Secretary Federal Energy Regulatory Commission
Via e-filing to FERC Docket P-1930

David Moore
Project Lead
Southern California Edison
david.moore@sce.com

Chad Mellison
Fisheries Biologist
United States Fish and Wildlife Service
Chad_Mellison@FWS.gov

Wayne Allen
Secretary Bose

September 1, 2023

Tristan Leong
Hydroelectric Coordinator
United States Forest Service
Tristan.leong@usda.gov

Todd Ellsworth
Hydrologist
United States Forest Service
Todd.ellsworth@usda.gov

Alyssa Marquez
Environmental Scientist
California Department of Fish and Wildlife
Alyssa.marquez@wildlife.ca.gov

Beth Lawson
Senior Hydraulic Engineer
California Department of Fish and Wildlife
Beth.Lawson@wildlife.ca.gov

ATTACHMENT A

COMMENTS ON PRE-APPLICATION DOCUMENT FOR KERN RIVER NO. 1 HYDROELECTRIC PROJECT

State Water Resources Control Board (State Water Board) staff are providing the following comments on Southern California Edison's (SCE) Pre-Application Document (PAD) for relicensing the Kern River No. 1 Hydroelectric Project (Project):

1. Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires any applicant for a federal license or permit for an activity that may result in any discharge to navigable waters, to obtain certification from the State that the discharge will comply with the applicable water quality requirements, including the requirements of section 303 of the Clean Water Act (33 U.S.C. § 1313) for water quality standards and implementation plans. Clean Water Act section 401 directs that certifications shall prescribe effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law, such as the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.). Conditions of certification shall become a condition of any federal license or permit subject to certification. The Project will result in a discharge to navigable waters and must obtain certification from the State Water Board as part of relicensing for continued operations.

   A certification issued by the State Water Board for the Project must ensure compliance with the water quality standards in the Central Valley Regional Water Quality Control Board's Water Quality Control Plan for the Lake Tulare Basin (Tulare Lake Basin Plan) and applicable state water quality control plans. Water quality control plans designate the beneficial uses of water that are to be protected, water quality objectives for the reasonable protection of the beneficial uses and the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Cal. Wat. Code, §§ 13241, 13050, subds. (h), (j).) The beneficial uses, together with the water quality objectives contained in the water quality control plans, and applicable antidegradation requirements, constitute California's water quality standards for purposes of the Clean Water Act. In issuing water quality certification for a project, the State Water Board must ensure consistency with the designated beneficial uses of waters affected by the Project, the water quality objectives developed to protect those uses, and antidegradation requirements. (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology* (1994) 511 U.S. 700, 714-719.)

   The Project facilities are located on the Kern River above Kern 1 Powerhouse and below the Borel Hydroelectric Project, downstream of Lake Isabella. The Tulare Lake Basin Plan sets forth water quality standards for waterbodies in the region, including Project-related waters of the Kern River. Beneficial uses established by the Tulare Lake Basin Plan for Project waters relevant to water quality include: hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife

habitat; and rare, threatened, or endangered species habitat. In addition to beneficial uses, the Tulare Lake Basin Plan includes narrative and numeric surface water quality objectives that aim to preserve and protect the beneficial uses listed above.

The State of California's Antidegradation Policy (State Water Board Resolution 68-16; see also 40 C.F.R. § 131.12), was developed to protect watersheds, including the Project watershed. Under the Antidegradation Policy, whenever the existing water quality is better than the water quality established in applicable water quality control plans and policies (both narrative and numerical), such existing quality must be maintained unless appropriate findings are made under the policy.

Information collected through the implementation of study plans in the Federal Energy Regulatory Commission (FERC) relicensing process will be used by FERC to develop license conditions and fulfill its obligations under the National Environmental Policy Act (NEPA) and by other agencies that must take permitting actions during relicensing proceedings. Study plan information will assist the State Water Board in developing CEQA and water quality certification conditions to ensure compliance with the Clean Water Act and appropriate requirements of state law.

2. Section 4.3 Draft Technical Study Plans. State Water Board staff supports SCE's intended process to work collaboratively with State Water Board staff and other relicensing participants to refine studies. When possible, working collaboratively with all relicensing participants often allows for expedited resolution of issues.

3. Compliance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) is required as part of the water quality certification process. CEQA requires the lead agency to evaluate a project's potential impacts to environmental resources as well as identify mitigation measures and alternatives to reduce project impacts. CEQA also requires public input on identified impacts and mitigation measures. CEQA documentation must analyze and evaluate the project's impacts to all relevant resources, including aquatic biological resources, special status species, water quality standards, and water quality control plans. Information from studies and data gathering during FERC relicensing informs CEQA document development.

   CEQA Guidelines define the lead agency as "the public agency which has the principal responsibility for carrying out or approving a project." (Cal. Code Regs.,

tit. 14, § 15367.) It is State Water Board staff's understanding that the State Water Board will act as the CEQA lead agency for the Project relicensing. State Water Board staff request SCE confirm in writing its understanding on whether the State Water Board will be the CEQA lead agency.

4. Below, State Water Board staff are providing comments on SCE's proposed WQ-2 Water Quality/Temperature Technical Study Plan:

   - State Water Board staff request the Water Quality/Temperature Technical Study Plan include an additional data collection site below Democrat Dam but above the Democrat Dam sandbox outflow. The Democrat Dam sandbox outflow provides required minimum instream flows when the dam is not spilling and so sampling in this part of the reach will shed light on potential impacts to beneficial uses from reservoir operations and facilities.

   - State Water Board staff request water column metals sampling, including but not limited to mercury, methylmercury, and arsenic, of the Project impoundment be included in the Water Quality/Temperature Technical Study Plans.

     Lake Isabella, upstream of the Project, is listed in the California 2020-2022 Integrated 303(d) List/305(b) Report for pH, dissolved oxygen, and methylmercury. Any oxygen depletion in the Project impoundment may lead to increased methylation of mercury due to anoxic conditions. Additionally, there is history of gold mining in the Kern River watershed with limited metals and other mining related water quality data available. Previous studies conducted during the Project's relicensing in 1994 indicated elevated arsenic levels above Tulare Lake Basin Plan standards.

     Given the history of the watershed and minimal existing data on mercury concentrations, additional information is needed to address water quality data gaps for the Project, establish baseline conditions, inform fish tissue data (requested below in Attachment B), and inform State Water Board staff's assessment of Project impacts to water quality.

   - The *Water Quality/Temperature Technical Study Plan* is proposed for one year, with some comparison to older limited water quality data. State Water Board staff believe one year of data collection is not adequate to evaluate the Project's potential impacts as its operations could span a 50-year term. One year of data collection may not provide sufficient water quality information for

various water year types. State Water Board staff request the above study continues data collection for a minimum of two years.

ATTACHMENT B

STUDY PLAN REQUEST FOR KERN RIVER NO. 1 HYDROELECTRIC PROJECT

State Water Resources Control Board (State Water Board) staff requests a Methylmercury Fish Tissue Sampling Study be conducted as part of relicensing Southern California Edison's (SCE) Kern River No. 1 Hydroelectric Project (Project).

1. *Describe the goals and objectives of each study proposal and the information to be obtained* (18 C.F.R. § 5.9(b)(1)):

   The goal of a methylmercury Methylmercury Fish Tissue Sampling Study would be to determine whether the Project may adversely affect beneficial uses in the Kern River watershed by providing conditions that increase the methylation of mercury.

   SCE's Pre-Application Document (PAD) Section 3.4.3 states, "Existing information sources indicate that the physical and water chemistry conditions in the bypass reach associated with the Project are of high quality and generally conform to regulatory water quality objectives and standards. No persistent, widespread water quality issues were found." Given that the data supporting this claim was collected over thirteen years ago, and mercury and some metals data collected during previous relicensing efforts twenty-nine years ago, additional water quality sampling and methylmercury fish tissues collections are warranted. When coupled with additional mercury water quality monitoring (requested in State Water Board's Attachment A, Comment 4), methylmercury fish tissue collections would inform changes in methylmercury concentrations associated with Project impoundment operations as opposed to inflows from Lake Isabella and may inform conditions of a water quality certification.

2. *If applicable, explain the relevant resource management goals of the agency with jurisdiction over the resource to be studied* (18 C.F.R. § 5.9(b)(2):

   The State Water Board has broad authority under the Clean Water Act (33 U.S.C. §§ 1251-1387), the California Constitution, and state statutes and regulations to restore and maintain the chemical, physical and biological integrity of the state's waters, and to regulate the diversion and use of water through the water right priority system in accordance with the State Water Board's reasonable use and public trust responsibilities. The Porter-Cologne Water Quality Control Act (Cal. Wat. Code, § 13000 et seq.) establishes a comprehensive program to protect water quality and the beneficial uses of water and charges the State Water Board and nine regional water quality control boards with protecting water quality in California.

ATTACHMENT B

STUDY PLAN REQUEST FOR
KERN RIVER NO. 1 HYDROELECTRIC PROJECT

Throughout the Federal Energy Regulatory Commission relicensing process, the State Water Board maintains independent regulatory authority to condition Project operations to protect water quality and beneficial uses consistent with the Clean Water Act, applicable water quality control plans, State Water Board regulations, and any other applicable state laws. With respect to mercury concentrations, the Project has the potential to impact beneficial uses related to the fisheries and recreational uses in the Kern River watershed. Requiring mercury fish tissue sampling as part of the relicensing effort for the Project is appropriate as it will ensure up to date fish tissue mercury level data and enable State Water Board staff to more accurately assess potential impacts to the recreational fishery and associated beneficial uses of the waters of the state within the Project area.

3. *Describe existing information concerning the subject of the study proposal, and the need for additional information* (18 C.F.R. § 5.9(b)(4)):

   PAD section 3.4 references limited twenty-nine-year-old data collected in 1994 to indicate that Project effects on the methylation of mercury are likely not adversely impacting water resources. State Water Board staff feel a more recent and robust study that follows standard fish tissue mercury protocols and represents the range of fish that could be caught and/or consumed by the public, coupled with concurrent water quality data related to mercury, will better ensure the Project is protective of human health and is compliant with water quality standards.

   The State Water Board is responsible for the protection of water quality. In relation to the Project, the State Water Board is the state agency with federal Clean Water Act section 401 water quality certification authority and through issuance of a certification must verify that Project operations do not violate a water quality standard or other applicable state water quality requirements. Additional fish tissue mercury information may inform future conditions of a water quality certification.

4. *Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements* (18 C.F.R. § 5.9(b)(5)):

   Mercury Fish Tissue sampling is frequently conducted in reservoirs with resident fish and/or sport fishing activities to help inform regulatory decisions regarding potential impacts to beneficial uses associated with the fishery and recreational uses, including fish consumption. The Project area has an active fishing

community that make use of Project facilities and fish in and around the Project impoundment. Any oxygen depletion in the Project impoundment may lead to increased methylation of mercury due to anoxic conditions. Democrat Dam impounds up to 247 acre-feet of water which could grow stagnant, hot, and anoxic in dry water years.

Lake Isabella, upstream of the Project, is listed in the California 2020-2022 Integrated 303(d) List/305(b) Report for pH, dissolved oxygen, and methylmercury. Additionally, there is a history of gold mining in the Kern River watershed with limited metals and other mining related water quality data available. Previous studies conducted during the Project's relicensing in 1994 included measurements indicating elevated arsenic levels above Tulare Lake Basin Plan standards.

When coupled with additional mercury water quality monitoring (requested in State Water Board's Attachment A, Comment 4), methylmercury fish tissue collections would inform changes in methylmercury concentrations associated with Project impoundment operations as opposed to inflows from Lake Isabella and may inform conditions of a water quality certification.

5. *Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge* (18 C.F.R. § 5.9(b)(6)):

   Mercury Fish Tissue sampling is frequently conducted in reservoirs with resident fish and/or sport fishing activities to help inform regulatory decisions regarding potential impacts to beneficial uses associated with the fishery and recreational uses, including fish consumption. As SCE is pursuing a new license to operate the Project for a termed period of up to 50 years, requiring current fish tissue sample is an appropriate data collection event to inform Project relicensing.

6. *Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs* (18 C.F.R. § 5.9(b)(7)):

   The Mercury Fish Tissue Sampling Study should run for two consecutive water-years and should include data collection described in the goals and objectives section. Based upon previous relicensing processes in California that have conducted similar fish tissue studies, State Water Board staff estimate the cost to

be between $10,000 and $15,000 with cost dependent on collaborative development of study specifics and methodologies.

Document Content(s)

American Whitewater

Document Accession #: 20230905-5170 Filed Date: 09/05/2023

Jeff Venturino
Regional Coordinator
10049 Yukon River Way
Rancho Cordova, CA 95670

americanwhitewater.org
jeffventurino@americanwhitewater.org

September 5, 2023

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Electronic Filing

Re: Southern California Edison's Proposed Study Plans and Responses to FERC's Additional Information Request; Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-090.

Dear Secretary Bose,

Enclosed for filing in the above-referenced proceeding is **AMERICAN WHITEWATER'S COMMENTS FOR SOUTHERN CALIFORNIA EDISON'S PRELIMINARY APPLICATION DOCUMENT, SCOPING DOCUMENT 1, PROPOSED AND UPDATED TECHNICAL STUDY PLANS FOR THE KERN RIVER NO. 1 HYDROELECTRIC PROJECT (FERC PROJECT NO. 1930-090).**

Sincerely,
Jeff Venturino
Regional Coordinator
American Whitewater
707-845-3499

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

| **Southern California Edison** | **Project Name Project No. P-1930-090** |

AMERICAN WHITEWATER'S COMMENTS FOR SOUTHERN CALIFORNIA EDISON'S PRELIMINARY APPLICATION DOCUMENT, SCOPING DOCUMENT 1, PROPOSED AND UPDATED TECHNICAL STUDY PLANS FOR THE KERN RIVER NO. 1 HYDROELECTRIC PROJECT (FERC PROJECT NO. 1930-090).

I. Introduction

American Whitewater offers the following comments Southern California Edison's (SCE) Preliminary Application Document, Scoping Document 1, Proposed and Updated Technical Study Plans.

II. Interest of American Whitewater

American Whitewater is a national non-profit 501 (c)(3) river conservation organization founded in 1954 with over 6,500 members and 100 locally based affiliate clubs, representing whitewater enthusiasts across the nation. American Whitewater's mission is to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely. A significant percentage of our members reside in and travel to California for its whitewater resources. As an organization that represents the conservation interests of whitewater enthusiasts, American Whitewater has an interest in the impacts of the Project on the Kern River.

III. Comments

American Whitewater supports the comments made by the State Water Resources Control Board and the National Parks Service. The National Parks Service comments highlight some key recreation user access issues in the Scoping Document and also SCE's submissions.

American Whitewater also requests a clarification by FERC on the correct Draft and Final License Application Due Dates, an incongruity pointed out by SCE comments E-Filed on the Scoping Document on 31 August 2023.

Preliminary Application Document

2.4.7 Gaging Stations

The 3 USGS gages cited do not accurately reflect real time flows and flow information availability for the project reach. Since December 2022, SCE has operated an "online flowphone" that presents hourly flows. This "online flowphone" is not available to CDEC or the USGS Water Dashboard. The USGS Water Dashboard hosts historic gage data for historic compliance but not real time flow information. The PAD should better describe the type of flow information available and the reporting timeframe for each gage. If multiple gages are employed for various data streams, or if "online flowphone" gage information is made available but not monitored for calibration as frequently, that information should be fully described in 2.4.7. Accurate realtime gage information is important for recreation users' access, safety, and planning purposes and it is important to fully articulate the complex gage information availability landscape to stakeholders and Commission staff. Making realtime 15-minute gage information

available on CDEC would alleviate complexity and make historic access to flow information for compliance, recreation users, and Commission review much simpler.

2.5.2 Project Generation And Recent Outflow Records

Outflow records are only provided annually and quarterly. A more thorough description of outflows in the project would help recreation stakeholders, agency, and commission staff to better understand the hydrology and outflow conditions within the project-affected reach. SCE should provide a more thorough analysis of available hydrologic information in this section.

Table 2-6 Summary of Current License Requirements and Compliance Status – 409

FERC and Southern California Edison concurred on May 31, 2006 that "future demands for river recreation in the project's bypassed reach" did not warrant additional monitoring or modifications to the project's existing operations. The cited Five-Year Recreation Use Report indicates in Section 9.2.3 Whitewater Boating that "the five boaters interviewed as part of the survey effort would have preferred flows greater than what they experienced (from 750cfs in July 2001 to 1220 cfs in June 2000". . It is reasonably likely that between 50 and 100 whitewater users paddled within the project-affected reach in 2023 alone and that its paddler use has continued to increase since culmination of the study. Changes in dissemination of whitewater information, whitewater craft, and baseline whitewater community skill level, require that additional monitoring and information gathering from whitewater paddlers is necessary to create a full picture of the recreation demand on this project.

3.11.4. Recreation Resources – Whitewater Boating

The PAD does not fully describe the whitewater resources available within the project-affected reach. The Cassady & Calhoun description is dated and does not provide a great narrative

description of the whitewater reaches indicated. Readily-available online descriptions of the reach provide a much more accurate narrative descriptive of the reach. The CA Creeks website (cacreeks.com/kern-xxx.htm) provides a much more accurate narrative description of the reach circa 1995. Since its authorship, whitewater difficulty has generally been tempered a bit, and whitewater use within the project-affected reach has increased, particularly within higher flow ranges than previously utilized.

Because the road follows the canyon, experienced paddlers can choose to paddle smaller portions of the whitewater within the reach andfrequently put in and take out at various use trails and pullouts throughout. The Richbar Section in particular does not conform to the Cassady & Calhoun description and deserves separate treatment from the more challenging whitewater above and below it. It is not clear whether this section would see increased use through improved access, flows, flow information, or whether changes in upstream operations of Lake Isabella from the Borel decommissioning or climate-change-driven operations will affect recreation use of this section in the coming license term.

3.11.5 Recreation Use of Project Lands – Five Year Recreation Use Monitoring Study

SCE's Five Year Recreation Use Monitoring Study, and later citation of SQF National Visitor Use Monitoring Data are both somewhat flawed in properly capturing whitewater use numbers. Because the Forest Service does not strongly enforce submission of Boater Manifests or frequently conduct use counts at undeveloped river access points, it is challenging to accurately estimate the number of whitewater recreationists using the river within the project-affected reach. While these numbers are included because they are the only quanitative whitewater

boating use numbers,their inclusion should be strongly tempered with caveats on their accuracy and utility.

Scoping Document 1

3.5.3 Project Decommissioning

Absent any study, it is premature to determine that project decommissioning is not a reasonable alternative. While the current structure of the Federal Power Act and FERC regulatory process may not provide a clear and specific inroad, a basic assessment of project safety, utility to the public good, and prospective benefits from project removal should be included as part of relicensing NEPA analysis now and in the future.

4.2.6 Recreation Resources

Recreation resources should be studied for both cumulative and site-specific effects.

4.2.9 Socioeconomics

The Commission's Scoping Document does not describe any potential investigation on the socioeconomic impacts of project-affected recreation in the reach. Reduction in the amount of water available to the river channel can have not only direct socioeconomic benefits but also lateral benefits. Recreation users are drawn to whitewater resources and bring tourism spending with them. Although KR1 is not as strong an economic driver as other upstream whitewater resources, the Commission should at least make note of the tourism economy alongside other

potential socioeconomic impacts and direct some level of study and resources toward recreation economics.

Updated Technical Study Plans

REC-2 Recreation Facility Use Assessment Technical Study Plan

American Whitewater supports National Park Service's requests for enhanced sampling in the REC-2 Use Assessment. Key improvements include a need for:

- Physical self-survey forms available at both developed and undeveloped access points within the project-affected reach. Drop boxes for these self-survey forms should be routinely checked for condition and should be designed to be tamper-proof and durable. SCE and contractors should work with Seqouia National Forest District Recreation staff to identify sites and tamper-proof installation methodology for these drop boxes.
- Enhanced seasonality to include December and January. SCE contractor staff indicated in a 30 August 2023 TWG meeting that this could be achieved but it was not reflected in the Updated Technical Study Plan issued before that meeting.
- In-person survey methodology that includes at least English and Spanish-speaking surveyors throughout the study period. Surveys should be designed to capture multiple user groups/types and not just peak use.
- Focus groups should be organized that bring together interested users and keep them informed throughout the study development and conduct process. Agency staff, recreation community members, and recreation nonprofits should be included.

- Undeveloped access points should be surveyed, where possible and safe, throughout the Facility Use study. Key access points to survey and appropriate methodology could be identified through stakeholder and user input and focus groups.

REC-3 Whitewater Boating Technical Study Plan

American Whitewater appreciates the opportunity to provide feedback on the REC-3 Whitewater Boating Technical Study. The study, as written, needs some refinement to accurately capture whitewater boating use within the project-affected reach. Consistent with Whittaker et al, it should include opportunities for stakeholder review, input, and adjustment at each Level of technical study. Additionally;

- It is not clear that "Document potential conflicts of whitewater boating flows with other recreation users" is necessarily a key study product for the project-affected reach. The 2005 Recreation Use Study suggested that non-whitewater users were not particularly flow sensitive and it is not clear that modification of project operations could necessarily greatly affect other recreation users' experience.
- "Project Facility Capabilities" should fully articulate what the capabilities of the project facilities to be determined are, with relation to prospective future recreation releases, conveyance dewatering, ramp time (including any ecological constraints), etc.
- It is not clear that a controlled flow study is not possible and also not necessary. Although SCE does not control Lake Isabella operations, they are both predictable and usual. As such, it might be the case that Levels 1 & 2 of the REC-3 study indicate a need for a controlled flow study at particular flow ranges that can be targeted in a controlled flow study. This might involve coordination with the Kern River Watermaster to determine the correct days and some level of

modification of project operations, but the cost and difficulty of such coordination is not likely to make it unduly difficult to do. As such, we suggest that SCE modifies the Level 3 portion of the study to more accurately reflect the open-ended nature of the Whittaker methodology and to leave the option for controlled flow study open as part of that paper's established methodology.

- It should be clear that Level 3 of the study will be conducted in a temporally stepwise fashion, following Levels 1 & 2, and with opportunity for stakeholder review, input, and refinement.
- It is not clear that QR codes are likely to reach all users within the reach. Similar to REC-2 study conduct above, physical survey forms and tamper-proof drop boxes should be installed as broadly as possible within the reach and stocked for all survey methodologies where self-survey is indicated.
- The study plan should clearly articulate stakeholder notification and discussion of changes or modifications to study methodology during study conduct. Although such changes might become necessary during actual conduct of the studies, stakeholders need to be made aware of any changes with opportunity for collaborative study adjustment in real time.
- The study schedule is overly ambitious and does not account for the possibility of hydrologic year impacts, regulatory process impacts, or other impacts that might require Level 3 to be conducted in the following year.

Respectfully submitted,

Jeff Venturino
California Regional Coordinator
American Whitewater

707-845-3499

Document Content(s)

Neil Nikirk

Neil Nikirk, Lake Isabella, CA.

Comments on Scoping Document 1 for the Kern River No. 1 Hydroelectric Project P-1930-090

Section 3.1.1 Existing Project Facilities

Diversion Dam and Impoundment

“Since Democrat Dam is a run-of-river dam and its whole crest is a spillway, the dam regularly spills and the impoundment and tailwater levels are governed by natural flows in the Kern River.”

This is not true at all. The impoundment and tailwater levels are governed by releases from Lake Isabella and are not at all “natural flows in the Kern River.” This is at least acknowledged later in Section 3.1.2 Existing Project Operation where it is stated “Lake Isabella, a 568,075 acre-foot reservoir owned and operated by the U.S. Army Corps of Engineers (USACE), is managed primarily for flood control, irrigation water storage, and delivery and the hydrology of the lower Kern River is dominated by its operations.”

3.5.2 Non-power License

The document states:

“At this time, no governmental agency has suggested a willingness or ability to take over the project. No party has sought a non-power license, and we have no basis for concluding that the Kern 1 Project should no longer be used to produce power. Thus, we do not consider a non-power license a reasonable alternative to relicensing the project.”

The Commission should indeed include a non-power license as a feasible alternative in the analysis. To conclude at the very beginning of the process that there is “no basis for concluding that the Kern 1 Project should no longer be used to produce power.” is jumping to a conclusion before any analysis of the utility as a power generating facility has been conducted. In light of the increasing capacity of solar generation in the region and the state as a whole, the miniscule amount of power generated by KR-1 may not be justified given the potential for environmental effects – which is supposed to be the subject of this NEPA analysis. It very well may be concluded that “the Kern 1 Project should no longer be used to produce power” following scoping and the analysis of environmental effects is complete.

3.5.3 Project Decommissioning

One of my primary concerns in the scoping process is that an option for decommissioning is not even being considered. It is true that FERC is not in the habit of forcing decommissioning upon the projects it licenses and has indicated in Scoping Document SD-1 that decommissioning is not on the table. It is not on the table because FERC waits until an applicant actually proposes to decommission a project, or a participant in a relicensing proceeding demonstrates that there are serious resource concerns that cannot be addressed with appropriate license measures and that make decommissioning a reasonable alternative. It is a given that Edison is not going to propose to decommission KR-1. In my opinion, there are no license measures that can address the numerous resource concerns associated with operation of

this project. Therefore, the option for denial of the operating license, leading to cessation of the diversion and decommissioning of the project needs to be considered from the start, not eliminated.

It is doubtful that decommissioning of KR-3 would have a substantial effect on Edison as a whole. KR-1 provides an extremely small fraction of the generation capacity that exists in California and a quite small fraction of Edison's full generation capacity. With the expansion of "green" energy sources such as solar and wind, will often be operating at a time when the wholesale market value of the electricity generated by KR-1 is low and may even be negative. The loss in generation capacity through decommissioning could easily be offset through other more profitable, reliable, and environmentally friendly means.

In summary, this project has outlived its usefulness, harms the environment, and may present a public health hazard. There is no justification for continued operation other than the economic value of the power generated, which is minimal at best and is dwarfed by the value provided by leaving water in the river. I feel that mitigation for the serious environmental impacts of this project can only be addressed by providing more water in this dewatered section on a consistent basis. Therefore, decommissioning of the KR-1 project needs to be one of the alternatives evaluated through the FERC process and, in my opinion, is the environmentally preferred alternative.

4.2.6 Recreation Resources

The first two bullets should be identified by an asterisk (*) showing that they will be analyzed for both cumulative and site-specific effects.

4.2.8 Cultural and Tribal Resources

These effects should be analyzed for both cumulative and site-specific effects as the proposed project may affect resources of religious, cultural, and traditional importance to Indian tribes within a much larger regional context than just the project area.

4.2.9 Socioeconomics

The effects in this category by definition should be analyzed for both cumulative and site-specific effects as they include the NF Kern Watershed, Kern County, and the City of Bakersfield.

Study AQ 1 – Hydrology

The model needs to include water availability and changes in hydrology in light of the effects of climate change on the source of the water - NF and SF Kern and Lake Isabella.

APPENDIX B

Technical Study Plans

Appendix B
Technical Study Plans

INTRODUCTION

Southern California Edison Company (SCE) has prepared the Proposed Study Plan comprised of 13 individual Technical Study Plans to develop sufficient information to identify potential Project effects and inform the development of new license conditions, as may be needed to reasonably balance multiple resource interests. The Technical Study Plans are organized into five major resource areas – Aquatic, Cultural and Tribal, Land, Recreation, and Terrestrial. The plans are identified below and are provided in their entirety herein.

Aquatic Resources
AQ 1 – Hydrology AQ 2 – Water Quality/Water Temperature AQ 3 – Fish Population
Cultural and Tribal Resources
CUL 1 – Built Environment CUL 2 – Archaeology TRI 1 – Tribal
Land Resources
LAND 1 – Road and Trail Condition Assessment LAND 2 – Erosion and Sedimentation
Recreation Resources
REC 1 – Recreation Facility Condition Assessment REC 2 – Recreation Facility Use Assessment REC 3 – Whitewater Boating
Terrestrial Resources
TERR 1 – Botanical TERR 2 – Wildlife

AQ 1 – HYDROLOGY
TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
AQ 1 – Hydrology

POTENTIAL RESOURCE ISSUES

- Modification of Kern River hydrology.

PROJECT NEXUS

- Project operations modify the hydrology in the bypass reach[1].

RELEVANT INFORMATION

The following information is available to characterize hydrology in the vicinity of the Kern River No. 1 Project. See Pre-Application Document (PAD) Section 3.3, Water Use and Hydrology for a summary of water use and hydrology information.

- California Regional Water Quality Control Board (CRWQCB), Central Valley Region, Water Quality Control Plan for the Tulare Lake Basin (CRWQCB 2018)
- FERC's Order Issuing New License, Kern River No. 1 Hydroelectric Project (FERC 1998)
- United States Army Corps of Engineers (USACE) Isabella Situation Report (USACE 2022)
- United States Geological Survey (USGS) Surface-Water Data for the Nation (USGS 2022)
    - Kern River near Democrat Springs (USGS Gage 1192500; SCE Gage 409) (daily, sub-daily)
    - Kern River No. 1 Conduit near Democrat Springs (USGS Gage 11192000; SCE Gage 410) (daily, sub-daily)
    - Kern River near Democrat Springs + Conduit (USGS Gage 11192501)

POTENTIAL INFORMATION GAPS

- Model of the Project operations under different flow regimes.
- Hydrologic alteration analyses of the flow regime with and without the Project.

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

STUDY OBJECTIVES

- Develop a model of the Project operations with and without the Project diversion and refine (as needed) the analysis of hydrology presented in the PAD Section 3.3, Water Use and Hydrology.

- Perform a hydrologic alteration analysis of flows related to Project diversions.

EXTENT OF STUDY AREA

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

STUDY APPROACH

The following describes the study approach for developing the Project Operations Model, conducting a hydrologic alteration analysis, and reporting.

HYDROLOGY DEVELOPMENT

- Conduct stakeholder hydrological modeling meetings to review and help guide the hydrological modeling approach.

- Use the 1998–2021 period of record (POR) for hydrological modeling based on data availability (historical gage data).

- Develop and use a spreadsheet operations model to characterize Project operations daily average flow hydrology for the POR. If there are issues identified in the historical hydrology / project operations that require sub-daily resolution, then in collaboration with stakeholders SCE will identify / implement a modeling approach to address sub-daily flow changes.

- SCE does not propose to independently model the effect of climate change on inflow hydrology. Project inflow is controlled by operations of Lake Isabella by the Army Corps of Engineers (ACOE) and schedule flow releases by the Kern River Water Master. If existing climate change modeling for Lake Isabella releases (inflow to the Kern No. 1 Project) is available over the Kern No. 1 POR, then SCE will incorporate the existing climate change inflow data into the Project hydrology model.

- Coordinate with other study plans / analyses (e.g., recreation, riparian) to ensure the model addresses their needs.

HYDROLOGIC ALTERATION ANALYSIS

- Analyze and compare hydrology using the following data and approaches (e.g., Richter et al. 1996):

    - Monthly flow exceedance plots / tables for the POR.

- Time-series plots for the POR.
- January to December (annual) plots / tables showing mean daily and 95%, 90%, 75%, 50% (median), 25%, 10%, and 5% exceedance flows.
- Tables and summary analysis showing differences in the following:
    - Monthly timing and magnitude of mean and median flow conditions (e.g., high and low flows).
    - Magnitude, duration, and timing of annual high flow and low flow conditions (1-day, 3-day, 7-day, monthly, etc.), including the presence of pulse flow events.
    - Rate, timing, and frequency of hydrograph changes (e.g., rate and timing of the declining limb of the spring high flow hydrograph). Use the gage data that is available electronically to characterize flow changes on a sub-daily basis (depending on data availability).

REPORTING

- The study methods and results will be documented in an AQ 1 – Hydrology Technical Study Memo (TSM). The TSM will include summary tables and maps, as appropriate. Stakeholder review and comment period for the TSM is identified below in the schedule.
- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–August 2024	Collaborate with stakeholder on the approach for refining the hydrology, as appropriate, and developing the Project Operations Model.
July 2024–October 2024	Refine the Project hydrology and associated operations model
October 2024–December 2024	Complete the hydrologic alteration analysis
July 2024–January 2025	Prepare draft technical memo
January 2025	Distribute draft technical memo to stakeholders
February 2025–April 2025	Stakeholders review and provide comments on draft technical memo (90 days)
May 2025–July 2025	Resolve comments and prepare final technical memo
December 2025	Distribute final technical memo in the Draft License Application

REFERENCES

CRWQCB (California Regional Water Quality Control Board). 2018. Water Quality Control Plan for the Tulare Lake Basin. Central Valley Region. Third Edition. Revised May 2018.

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AQ 2 – WATER QUALITY / TEMPERATURE TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
AQ 2 – Water Quality / Temperature

POTENTIAL RESOURCE ISSUES

- Water quality and water temperature compliance with regulatory requirements.

PROJECT NEXUS

- Project operations and maintenance activities could affect water quality and water temperature in the Democrat Dam Impoundment and bypass reach.

RELEVANT INFORMATION

The following information is available to characterize water quality and temperature in the impoundment and bypass reach[2]. See Pre-Application Document Section 3.4, Water Quality for a summary of water quality information.

- Water quality criteria
  - Water Quality Control Plan for the Tulare Lake Basin (CRWQCB 2018)
  - California Toxics Rule (CTR) Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (Federal Register, 65 FR 31682, United States Environmental Protection Agency [USEPA] 2000)
  - National Toxics Rule (NTR) Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants" (Federal Register, 57 FR 60848, USEPA 1992)
- Published study reports and data
  - Application for New License for the Kern River No. 1 Hydroelectric Project (SCE 1994)
  - FERC (Federal Energy Regulatory Commission). 1998. Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014. California. June 17.
  - Kern River No. 1 Hydroelectric Project (FERC No. 1930) Temperature Monitoring Summary Report (SCE 2008)
  - USGS (United States Geological Survey) National Water Information System Online Database. Available at: https://waterdata.usgs.gov/nwis

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

- US EPA (United States Environmental Protection Agency) Water Quality Data 2023. https://www.epa.gov/waterdata/water-quality-data
- Water Board (California State Water Board) California Environmental Data Exchange Network. http://www.ceden.org/
- NWQMC (National Water Quality Monitoring Council) Water Quality Portal. https://www.waterqualitydata.us/

POTENTIAL INFORMATION GAPS

- Recent water quality and water temperature conditions in the impoundment and bypass reach.

STUDY OBJECTIVES

- Collect seasonal water quality (physical, chemical, and bacterial) and water temperature in the impoundment and bypass reach.
- Compare water quality and water temperature conditions to the objectives/criteria of the Basin Plan (CRWQCB 2019) and other water quality standards.

EXTENT OF STUDY AREA

- The study area for the water quality and water temperature assessment includes the Democrat Dam Impoundment and bypass reach Table AQ 2-1 and Map AQ 2-1.
- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain).

STUDY APPROACH

- The following describes the water quality and water temperature sampling including seasonal *in-situ* water quality measurements; seasonal water quality grab sampling; bacterial sampling, water temperature loggers, laboratory analysis, and reporting.

WATER QUALITY SAMPLING LOCATIONS

- Water quality and water temperature sampling locations are identified in Table AQ 2-1 and depicted on Map AQ 2-1.
- Exact sampling locations will be determined in the field based on sampling suitability (i.e., well-mixed and deep enough for representative sampling) and accessibility.
- Sampling locations will be documented using hand-held global positioning system (GPS) units.

- Sediment management related issues and their potential effects on water quality are addressed in the Land 2 – Erosion and Sedimentation Technical Study Plan.

SEASONAL *IN-SITU* FIELD MEASUREMENTS

- Collect *in-situ* water quality measurements, dissolved oxygen (DO) (mg/L and % saturation), pH, specific conductance (µS/cm), salinity (ppt), alkalinity (mg/L), turbidity (NTU), and water temperature (°C) in the impoundment and bypass reach.
    - Samples will be collected once during the spring runoff (June, access permitting), and once during the late summer/early fall base-flow period (e.g., August to October) in 2024 and 2025.
    - At stream sampling locations, measurements will be made approximately 0.1 meter (m) beneath the surface in flowing, well-mixed riffle or run areas.
    - Samples will be collected using a multi-parameter water quality meter (HydroLab, YSI, or similar DataSonde) and field kit (e.g., alkalinity).
    - Pre- and post-sampling calibration of in-situ instrumentation will be conducted following the manufacturer's instructions.

SEASONAL WATER QUALITY GRAB SAMPLES

- Collect water quality grab samples at the impoundment and in the bypass reach.
    - Samples will be collected twice, once during the spring runoff (high flow) and once during the late summer/early fall base-flow (low flow) period in 2024 and 2025 in coordination with the in-situ water quality measurements to screen for potential water quality issues.
    - At stream sampling locations, grab samples will be collected approximately 0.1 m beneath the surface in flowing, well-mixed riffle or run areas.
    - At the impoundment location, grab samples will be collected from near the surface (1 m deep) and at mid-depth.
- Collect samples consistent with EPA protocols for each analyte (see Laboratory Analysis below) and consistent with general water quality sampling methods (National Field Manual for the Collection of Water-Quality Data; https://www.usgs.gov/mission-areas/water-resources/science/national-field-manual-collection-water-quality-data-nfm?qt-science_center_objects=0#qt-science_center_objects).
    - The sampling team shall employ a strict quality assurance/quality control (QA/QC) program, including the collection of equipment blanks, field blanks, and field replicates.

- Water quality samples will be decanted into laboratory-supplied sample containers and analyzed at a State-certified water quality laboratory.
- The sample containers will be labeled with the date and time that the sample is collected and the sampling site or identification label.
- The sample container will be preserved (as appropriate), stored, and delivered to a State-certified water quality laboratory for analyses in accordance with maximum holding periods.
- A chain-of-custody record will be maintained with the samples at all times.

BACTERIAL SAMPLING

- Collect surface water bacteria samples for total and fecal coliform downstream of day-use recreation areas (Table AQ 2-1). Sample five relatively evenly spaced times in the month of July 2024 and 2025.
- Avoid collecting surface "scum" by plunging the open bottle (sterilized) mouth quickly downward below the water surface. Avoid contact with or disturbance of the streambed. Allow the bottle to fill with the opening pointed slightly upward into the current. Remove the bottle with the opening pointed upward toward the water surface and tightly cap it, allowing about 2.5 to 5 centimeters (cm) of headspace for proper mixing.
- In the event that a sample or samples exceed Basin Plan objectives, coordinate with the Water Board and Forest Service (within 10 business days) to discuss the issue, as appropriate.

WATER TEMPERATURE

- Collect existing water temperature and nearby meteorological conditions for the locations identified in Table AQ 2-1 from May 15 to October 15, 2024 and May 15 to October 15, 2025.
  - Install and maintain redundant water temperature probes at seven locations including upstream of the impoundment and in the bypass reach.
  - Obtain meteorological station data (relative humidity, wind speed, solar radiation, air temperature) from a nearby existing weather station.
  - Download data bi-monthly from the water temperature probes.
  - Summarize temperature and meteorological data, including depiction of seasonal patterns and daily averages, minimums, and maximums as a function of time and location in study area and aquatic species requirements (e.g., Moyle 2002).

LABORATORY ANALYSIS

- Water quality samples collected during the field program will be processed by a State-certified laboratory approved by the State Water Resources Control Board for chemical and bacterial analysis.

- The parameters to be analyzed by the analytical laboratory are provided in Table AQ 2-2.

- The laboratory will report each parameter analyzed with the laboratory method detection limit, reporting limit, and practical quantification limit. The laboratory will attempt to attain reporting detection limits that are at or below the applicable regulatory criteria.

- Compare results from the water quality sampling with the water quality objectives/criteria identified in the Tulare Lake Basin Plan (CRWQCB 2018) and with other relevant water quality standards.

REPORTING

- Study methods and results will be documented in an AQ 2 – Water Quality / Temperature Technical Study Memo (TSM). The TSM will include summary tables and maps, as appropriate. Stakeholder review and comment period for the TSM is identified below in the schedule.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

- If water quality issues are identified during the first-year sampling, these will be discussed at the Initial Study Report Meeting scheduled for March 30, 2025.

SCHEDULE

This is a two-year study with results of the first year reported in the Initial Study Report (ISR) and Draft License Application and results of the second year reported in the Updated Study Report (USR) and Final License Application.

Date	Activity
May–June 2024 and 2025	Install water temperature probes and conduct spring water quality *in-situ* and grab sampling
May–October 2024 and 2025	Maintain water temperature probes
July 2024 and 2025	Conduct bacteria sampling at the four day-use recreation areas
September 2024 and 2025	Conduct summer/fall water quality *in-situ* and grab sampling
October 2024–February 2025 (Year 1) October 2025–January 2026 (Year 2)	Analyze data and prepare draft technical memo

Date	Activity
March 2025 (Year 1) January 2026 (Year 2)	Distribute draft technical memo to stakeholders
April–June 2025 (Year 1) February-March 2026 (Year 2)	Stakeholders review and provide comments on draft technical memo (90 days – Year 1; 60 days - Year 2)
July-August (Year 1) April 2026 (Year 2)	Resolve comments and prepare final technical memo
December 2025 (Year 1) May 2026 (Year 2)	Distribute final technical memo (Year 1) in Draft License Application. Distribute final comprehensive technical memo (Year 1 and Year 2) in the Final License Application.

REFERENCES

CRWQCB (California Regional Water Quality Control Board). 2018. Water Quality Control Plan for the Tulare Lake Basin Third Edition. Revised May 2018 (with approved amendments). Accessed: November 2022. Available at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tularelakebp_201805.pdf

FERC (Federal Energy Regulatory Commission). 1998. Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014. California. June 17.

NWQMC (National Water Quality Monitoring Council). 2023. Water Quality Portal. Available at: https://www.waterqualitydata.us/

SCE (Southern California Edison Company). 1994. Application for New License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930. April 28.

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Water Board (California State Water Board). 2022. California Environmental Data Exchange Network. Available at: http://www.ceden.org/

TABLES

Table AQ 2-1. Water Quality Sampling Locations

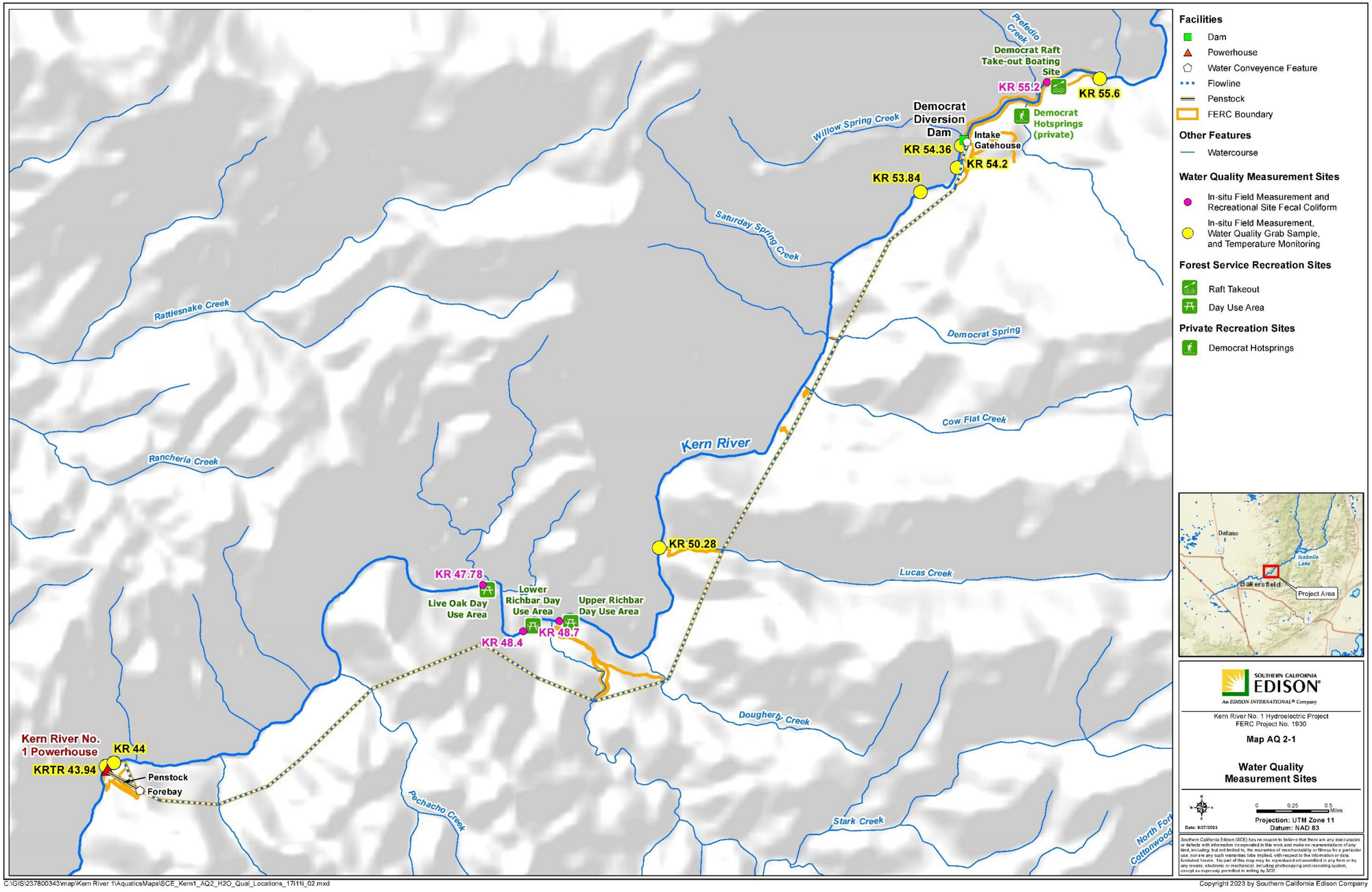
Site Name	Sampling Location River Mile (RM)	In-situ Field Measurement	Water Quality Grab Sample / Temperature Monitoring Locations	Fecal Coliform
KR 55.6 (Kern River above Democrat Dam)	RM 55.6	X	X	--
KR 55.2 (Kern River below rafting take-out)	RM 55.2	X	--	X
KR 54.36 (Kern River between Democrat Dam and Instream Flow Release)	RM 54.36	X	X	--
KRC 54.2 (Kern River below Instream Flow Release))	RM 54.2	X	X	--
KR 50.84(Kern River near USGS gage 1192500; below Democrat Dam)	RM 53.84	X	X	--
KR 50.3 (Kern River near Lucas Creek)	RM 50.3	X	X	--
KR 48.7 (Kern River below Upper Richbar Day Use Area)	RM 48.7	X	--	X
KR 48.4 (Kern River below Lower Richbar Day Use Area)	RM 48.4	X	--	X
KR 47.78 (Kern River below Live Oak Day Use Area)	RM 47.78	X	--	X
KRTR 43.94 (Kern River No. 1 Powerhouse Tailrace)	RM 43.94	X	X	--
KR 44.0 (Kern River upstream of Kern River No. 1 Powerhouse)	RM 44.0	X	X	--

Notes: RM = River Mile

Table AQ 2-2. Parameters for Water Quality Monitoring and Laboratory Analysis

Parameter	Analysis Method	Sample Holding Times
Water Quality Monitoring Parameter		
***In-Situ* Measurements**		
Dissolved Oxygen (DO)	Water Quality Meter	Not Applicable
PH	Water Quality Meter	Not Applicable
Water Temperature	Water Quality Meter	Not Applicable
Specific Conductance	Water Quality Meter	Not Applicable
Laboratory Analysis Parameter		
General Parameters (Grab Samples)		
Nitrate/Nitrite	EPA – 353.2	48 hours
Ammonia as N	EPA – 350.1	28 days
Total Kjeldahl Nitrogen	EPA – 351.2	28 days
Total Phosphorus	EPA – 365.2	28 days
Ortho-phosphate	EPA – 365.1	48 hours
Total Dissolved Solids	EPA – 160.1	7 days
Total Suspended Solids	EPA – 160.2	7 days
Total Alkalinity	EPA – 310.1	14 days
Metals (Grab Samples)		
Arsenic	EPA – 1638	48 hours
Cadmium	EPA - 1638	48 hours
Copper	EPA - 1638	48 hours
Iron	EPA – 1638	48 hours
Lead	EPA – 1638	48 hours
Manganese	EPA – 1638	48 hours
Nickel	EPA - 1638	48 hours
Chromium	EPA - 1638	48 hours
Mercury - Total	EPA – 1631e	48 hours
Methylmercury	EPA – 1631e	48 hours
Bacteria (Grab Samples)		
Total Coliform	EPA – SM9222B	24 hours
Fecal Coliform	EPA – SM9222B	24 hours

MAPS



Map AQ 2-1. Water Quality Measurement Sites

AQ 3 – FISH POPULATION TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
AQ 3 – Fish Population

POTENTIAL RESOURCE ISSUE

- Fish species composition, distribution, and abundance.

PROJECT NEXUS

- Project operations modify the flow regime and fish habitat in the impoundment and bypass reach[3].

RELEVANT INFORMATION

The following information is available to characterize the fish population in the Democrat Dam Impoundment and bypass reach. See Pre-Application Document Section 3.5, Fish and Aquatic Resources for a summary of fish population and passage information.

- California Fish Website, Fish Species by Watersheds: Isabella Lake-Kern River-180300010607 (CalFish 2020).
- FERC's Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014 (FERC 1998)
- SCE's Application for New License for the Kern River No. 1 Hydroelectric Project (SCE 1994)
- SCE's Borel Fish Population Monitoring Report 2020 (SCE 2021).
- Fishes of the Sacramento-San Joaquin Estuary and Adjacent Waters, California: A Guide to the Early Life Histories (Wang 1986)
- SCE's Final Report Kern River No. 1 Hydroelectric Project Smallmouth Bass Study (SCE 2009)
- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CNDDB 2022)
- Nonindigenous Aquatic Species Database (USGS 2020)
- Natural Resource Information System (NRIS) (U.S. Forest Service [Forest Service] 2022)

POTENTIAL INFORMATION GAPS

- Recent information on fish composition, distribution, and abundance.

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

STUDY OBJECTIVES

- 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.

EXTENT OF STUDY AREA

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

STUDY APPROACH

STUDY SITES

- The locations of study sites for developing fish species composition and abundance estimates are shown in Table AQ 3-1, Figure 3-1, and Map AQ 3-1. Sampling will be conducted during the late summer/early fall base flow period. The river sampling sites (electrofishing) will approximately 100 m long inclusive of the historical sampling sites (ENTRIX 2009). The Democrat Dam Impoundment sampling site will include a minimum of 300 meters of shoreline habitat.

- The specific locations of the sampling sites will be determined in the field and will approximate the historical sampling locations (adjusted for channel changes and input from resource agencies, as appropriate). Mesohabitat characterization will be based on aerial image mapping and will be used to identify representative reach sampling sites with mesohabitat types in approximately similar proportion to the larger geomorphic river segments. Table AQ 3-1 shows the specific location, length, and sampling methods.

IMPOUNDMENT SAMPLING

- The impoundment sampling methods will be electrofishing and trammel netting (Table AQ 3-1) (poor water clarity precludes snorkeling at this site).

    - Electrofishing will be conducted using Smith-Root™ “E-Cat” light-duty cataraft electrofisher (e-cat) with oars and a small outboard motor or similar equipment. It is assumed the cataraft can be safely deployed at the site (i.e., the flow allows safe deployment with no risk of entrainment over the diversion dam).

    - If the e-cat cannot be deployed, backpack electrofishers will be used along the shore where wading is possible.

    - If the e-cat can be deployed, then it will be used to set 2 trammel nets for 4 hours (daylight) in deeper portions of the impoundment that cannot be electrofished effectively.

BYPASS REACH (RIVER) SAMPLING

- The bypass reach (river) study sites will be sampled using electrofishing and trammel netting (Table AQ 3-1) (poor water clarity precludes snorkeling at these sites).
    - Where possible due to natural river features or the river being amendable to blocknetting, 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 (<1.5 m) at each study site.
    - Captured fish from each pass will be kept in separate live wells or buckets. Where possible, the sampling sites will be partitioned into mesohabitat types for sampling.
    - In deeper portions of the sampling site, an e-cat electrofisher cataraft will be used to obtain abundance estimates based on length/area sampled provided the e-cat cataraft can be transported to the sampling site.
    - If pool habitat exists that is deeper than the e-cat can effectively electrofish, 1 to 2 trammel nets will be set in the river for 4 hours (daylight), if possible.

FISH PROCESSING

- Fish will be anesthetized (CO_2), 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. 1998.
- The lengths and widths of the habitat units sampled will be recorded to calculate fish abundance by length and area (density) of stream sampled.
    - Captured fish from each pass will be kept in separate live wells or buckets. Where possible, the sampling sites will be partitioned into mesohabitat types for sampling.
    - In deeper portions of the sampling site, an e-cat electrofisher will be used to obtain abundance estimates based on length/area sampled if the e-cat can be transported to the sampling site.
- 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.

WESTERN POND TURTLE (WPT) AND INCIDENTAL SPECIES

- At the Democrat Dam Impoundment and bypass reach, observations of WPT and/or other incidental aquatic species will be documented at the fish and water quality sampling locations.

REPORTING

- Study methods and results will be documented in a AQ 3 – Fish Population Technical Study Memo (TSM). Stakeholder review and comment period for the TSM is identified below in the schedule.

- Fish abundance will be reported by species and depending on the sampling method used by either catch-per-unit-effort (CPUE) (fish per length/area of stream sampled or by net-hour) in the case of trammel netting or e-cat electrofishing and by (fish per mile, fish per acre) for multi-pass electrofishing.

- Fish abundance will be compared to historical data sets in the Kern River No. 1 bypass reach and recent sampling in the upstream Borel Project river reach (ENTRIX 2009; Cardno 2021).

- Develop a distribution map for each species in the Project study area using the quantitative abundance estimates and qualitative sampling data.

- Develop a fish life stage periodicity chart (or life history chronology chart by month) for each species based on available literature, consultation with qualified fisheries biologists, and the fish population sampling data.

- Develop length frequency histograms of sampled fish and to determine the age structure of fish populations using scale data.

- Calculate fish condition factors using measured weight and length data.

- Upon request, an electronic database (Excel spreadsheet) will be provided of all fish sampling data (date, location, fish species, fish size, sampling pass, etc.) to resource agencies and interested stakeholders.

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–July 2024	Select fish population sampling sites in collaboration with interested resource agencies
August 2024–October 2024	Conduct quantitative/quantitative fish sampling (electrofishing/ snorkeling)
November 2024–February 2025	Analyze data and prepare technical memo

Date	Activity
February 2025	Distribute draft technical memo to the stakeholders
March 2025–May 2025	Stakeholders review and provide comments on draft technical memo (90 days)
June 2025–July 2025	Resolve comments and prepare final technical memo
December 2025	Distribute final technical memo in Draft License Application

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TABLES

Table AQ 3-1. Fish Population Sampling Locations[1] – Development in Progress

Study River and Site ID	Sampling Location		Site Length (m)	Sampling Dates	Sampling Method	Type of Reach	
	River Miles	GPS at Downstream Starting Location				Bypass Reach	Impoundment
Kern River							
Democrat Dam Impoundment	RM 54.9	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting		▪
Site A -- Kern River Bypass Reach	RM 52.8	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting	▪	
Site B -- Kern River Bypass Reach	RM 52.0	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting	▪	
Site C -- Kern River Bypass Reach	RM 50.9	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting	▪	
Site D -- Kern River Bypass Reach	RM 48.9	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting	▪	
Site E -- Kern River Bypass Reach	RM 47.4	TBD	100	Late Summer / Fall 2024	Electrofishing/Trammel Netting	▪	

[1]All information is tentative. Information to be determined in the field and completed in coordination with interested resource agencies.

FIGURES

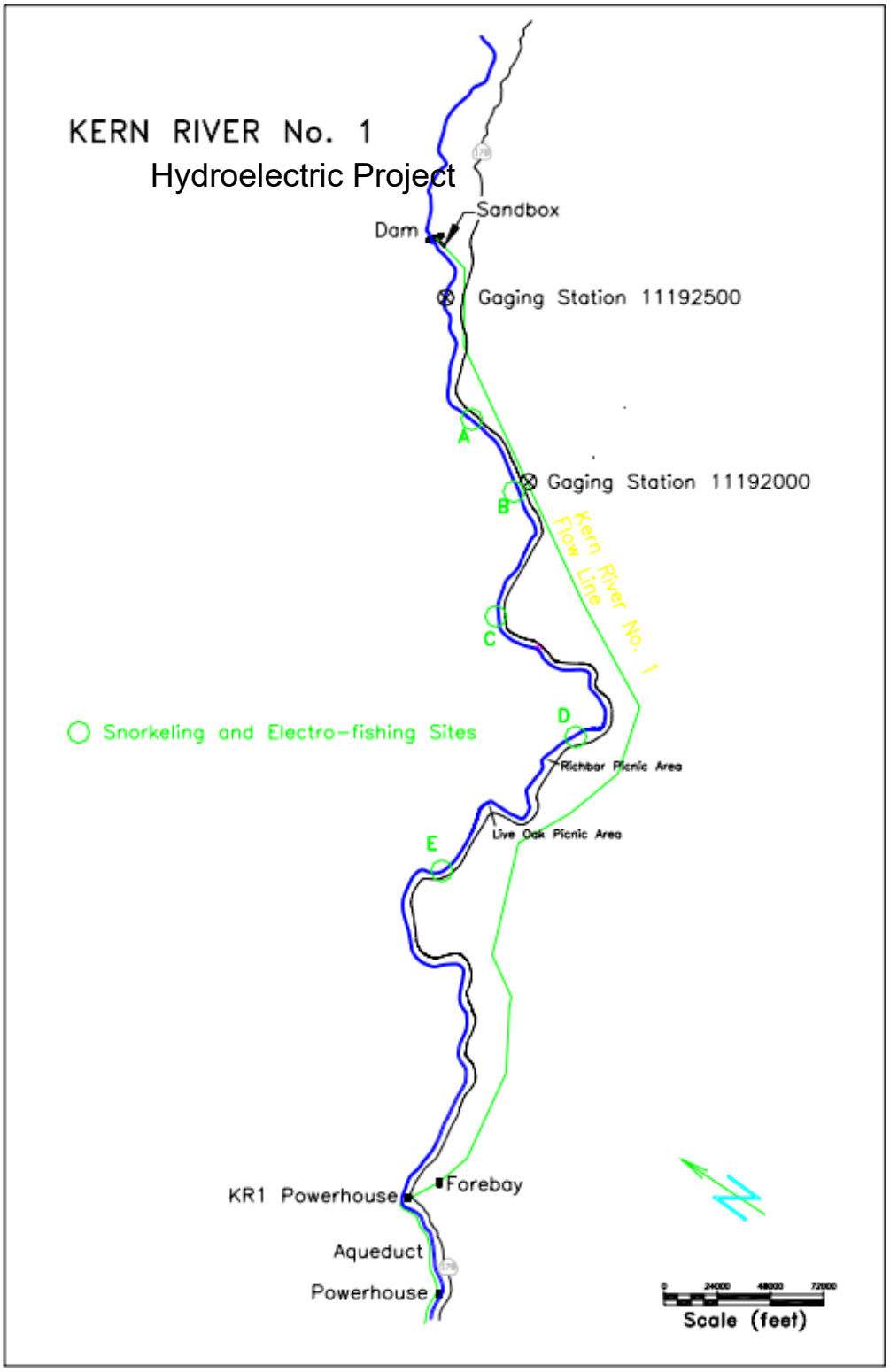
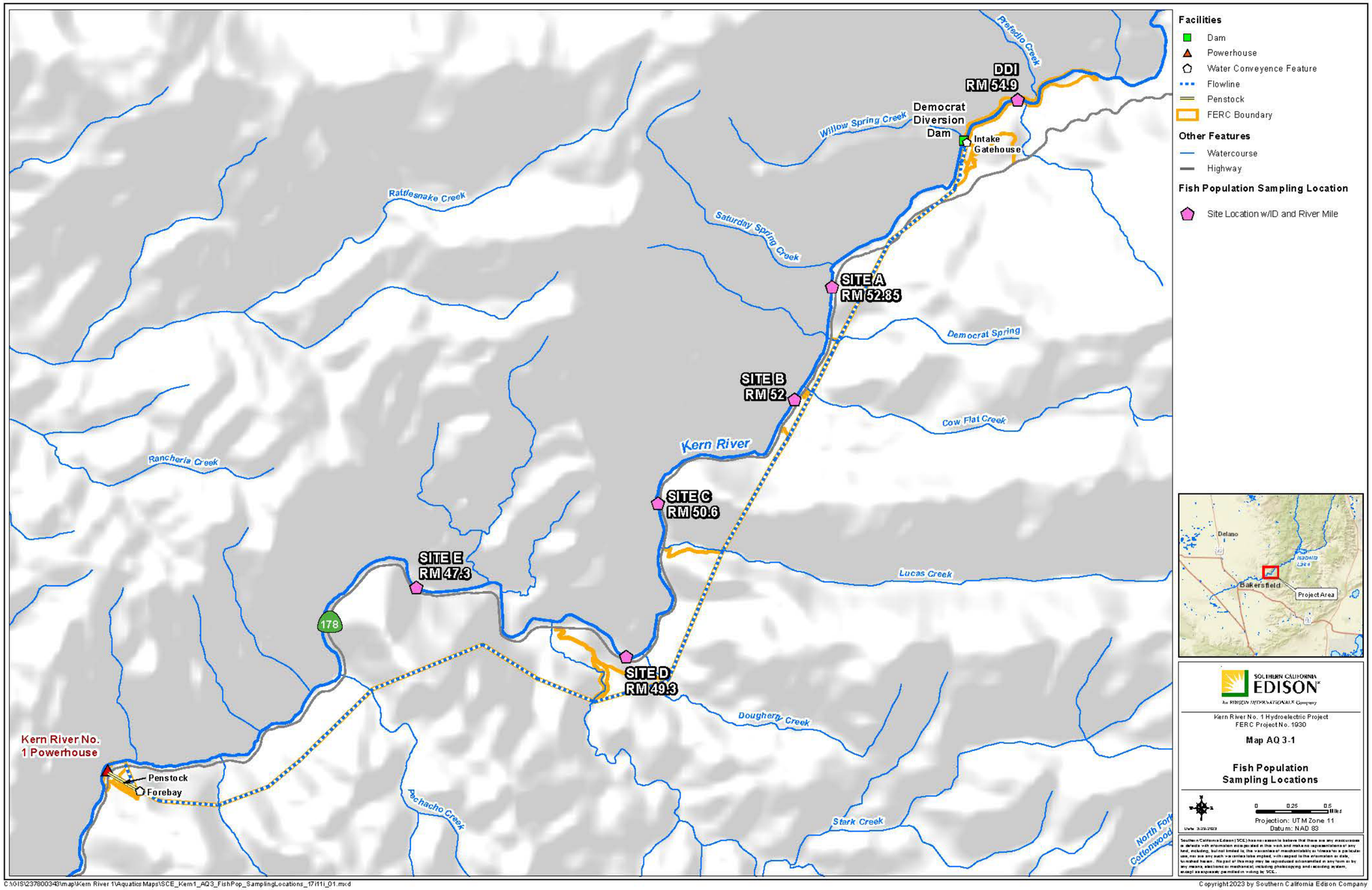


Figure AQ 3-1. Historical Kern River No. 1 Hydroelectric Project Fish Populations Sampling Site Locations

MAPS



Map AQ 3-1. Fish Population Sampling Locations

CUL 1 – BUILT ENVIRONMENT TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
CUL 1 – Built Environment

POTENTIAL RESOURCE ISSUES

- Management of built environment historic properties.

PROJECT NEXUS

The Federal Energy Regulatory Commission's (FERC) decision to issue a new license is considered an "undertaking" pursuant to 36 Code of Federal Regulations (CFR) § 800.16(y). The National Historic Preservation Act (NHPA) of 1966, as amended, requires Federal agencies to consider the effects of undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on those undertakings.

Project Operation and Maintenance (O&M) activities could potentially affect built environment historic properties as follows:

- Removal of and/or alteration to a built environment historic property.
- Change in use of a built environment historic property.
- Alterations that do not meet the *Secretary of Interior's Standards for Rehabilitation of Historic Places* to the contributing resources of a National Register of Historic Places (NRHP) historic district including the Kern River No. 1 Historic District.

RELEVANT INFORMATION

The following information is available regarding built environment cultural resources and historic properties in the vicinity of the Project. See Pre-Application Document (PAD) Section 3.13, Cultural Resources for a summary of available cultural resource information.

- Records search information from the ArcGIS Online (AGOL) database maintained by SCE, received October 10, 2022. The database includes heritage data from the Forest Service Heritage Programs in Region 5 within the SCE service territory and subscription data from the California Historical Resources Information System (CHRIS). The CHRIS provides detail regarding previous survey and documentation in the vicinity of the Project (inclusive of FERC Project boundary and a half-mile record search Study Area).
- *Cultural Resources Management Plan for Southern California Edison Company's Kern River No. 1 Hydroelectric Project, Kern County, California, FERC Project No. 1930* (SCE 1993). The Management Plan provides documentation and background information on the known historic properties in the Project Boundary and current SCE management responsibilities and requirements for cultural resources.

- *Cultural Resources Inventory of Pacific Gas and Electric Company's Kern Canyon Project and National Register of Historic Places Evaluation of Pacific Gas and Electric Company's Kern Canyon Powerplant, Pacific Gas and Electric Company's Kern Canyon Project, FERC No.178, Kern County, California* (Pacific Legacy 2002). The report documents the archaeological and built-environment resources at the Kern Canyon Powerplant.

- *An Inventory and Evaluation of Archaeological and Historic Resources along the Kern River in the Vicinity of Democrat Hot Springs, Kern County, California, for the Proposed SCE Democrat Hydroelectric Project* (White and Taylor 1984). The report documents the archaeological and built-environment resources near Democrat Hot Springs.

- *Cultural Resources Inventory Report of Access Roads and Flume Sections Associated with the Kern River No. 1 Hydroelectric Project* (Kovak and Jackson 2010). The report documents some of the archaeological and built environment resources associated with CA-178/Kern Canyon Road and the Kern River No. 1 Hydroelectric Project.

- *Historic-Era Built Environment Survey Report, Transmission Line Rating Remediation Program. Kern River to Los Angeles Project. Kern and Los Angeles Counties, California* (Urbana Preservation and Planning 2022). The report documents and evaluates the built environment resources associated with the SCE Kern River to Los Angeles 60V transmission line and supplements documentation of resources associated with CA-178/Kern Canyon Road and a potential San Joaquin Valley Historic Cultural Landscape.

- *Historic Resource Evaluation Report Kern River No. 1 Powerhouse. FHWA881212A. In Proposed, Widening and Curve Realignment Project, HPR-CA, FAP-178, 06-Ker-178- 15.3/15.5*. (Mikesell 1988). The report documents the Kern River No. 1 Hydroelectric Project Powerhouse and associated built environment resources and recommends National Register eligibility.

- Historic American Engineering Record (HAER) CA-165-A, Kern River No. 1 Hydroelectric System, Powerhouse Exciters (Taylor 1994).

- HAER, FERC 080206D, Kern River No. 1 Stable (Collum 2009). The HAER documentation of the Kern River No. 1 Hydroelectric Project Stable was accepted by California State Historic Preservation Officer (SHPO) but only a FERC number assigned.

POTENTIAL INFORMATION GAPS

- Updated physical documentation and information on known built environment cultural resources located within the Area of Potential Effects (APE).

- Built environment surveys of the APE using current protocols.

- NRHP evaluations or updated evaluations of historic-period built environment resources that could be potentially affected by Project O&M activities (Undertaking).

- Updated NRHP evaluation of the Kern River No. 1 Historic District that documents the current status and condition of the District contributors and includes Project facilities that were not documented as part of previous District recordation.

STUDY OBJECTIVES

- Document all built environment cultural resources within the APE.

- Evaluate or, as appropriate, provide update evaluation under the criteria of the NRHP for built environment cultural resources in the APE to determine whether built environment historic properties may be affected by O&M of the Project.

EXTENT OF STUDY AREA AND AREA OF POTENTIAL EFFECT:

- For built environment cultural resources, the Study Area includes the area within 0.5 mile of the APE (Map 3.13-1).

    - This Study Area will be used only for records searches and archival research to develop contextual and background information.

- Under 36 CFR Part 800, the APE is defined as “the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties” (36 CFR 800.16[d]). Changes may be direct or indirect.

    - The proposed APE for the purposes of study implementation is defined as the area within the FERC Project boundary, a 25-foot buffer from centerline of the access trails located outside of the FERC boundary, and a 50-foot radius around FERC ancillary facilities such as gauges located outside of the FERC boundary (Map 3.13-1).

    - Built environment resources are identified in Tables 3.13-3 and 3.13-4. All resources within the APE will be considered as part of study implementation and included in the study survey population. Detailed maps showing the location of built environment resources are available in ([CONFIDENTIAL] Maps 3.13-3a–g).

- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain) or on private property for which SCE has not received specific approval from the landowner to enter the property to perform the study.

- The Study Area and APE may be expanded during the relicensing proceeding, in consultation with the cultural resources Technical Working Group (TWG).

STUDY APPROACH

The Built Environment Technical Study will involve a multi-step process that includes: (1) establishing the APE; (2) a detailed review of previous studies and site records; (3) archival research; (4) field surveys/inventory, including recording and mapping resource locations and resource condition assessments; (5) NRHP/California Register of Historical Resources (CRHR) evaluations and update of previous evaluations, as appropriate; and (6) technical study reporting and consultation with the TWG regarding technical study products. Specific tasks that will be implemented during each step are described below.

ESTABLISH APE

- Submit the proposed APE on the behalf of FERC to the SHPO for comments on the adequacy of the APE pursuant to 36 CFR § 800.16[d]). The APE may be expanded during the relicensing proceeding if any refinement/modification of the Project results in utilizing additional lands outside the APE.

REVIEW OF PREVIOUS STUDIES AND SITE RECORDS

- Review previous investigations, HAERs, survey reports, and site records to identify the methods and protocols that were used to inventory built environment resources in the APE and whether there are previously identified built environment resources that require updated documentation to align with current standards for adequacy.

ARCHIVAL RESEARCH

- Conduct supplemental background research to develop an appropriate historical context for the Project, including a general history of the contextual Study Area framing the APE, and coordination with the Tribal Resources Study to identify local Native Americans who may have contributed to construction and operation of the historic hydroelectric system.

  This research will utilize, be validated and build upon the existing studies documenting resources within the Project APE to support NRHP evaluations.

  Archival research may include the following sources, as well as other sources and repositories identified through research undertaken as part of the study:

  - California State Archives, Sacramento
  - California State Library, California History Room, Sacramento
  - Contextual research regarding utility and hydroelectric development
  - Huntington Library, SCE Records, and Photographs and Negatives Collection, San Marino
  - Library of Congress

- Kern County Museum, Bakersfield
- Kern County Historical Society, Bakersfield
- Records from the Sequoia National Forest (SQF), Porterville
- Online research, including general and engineering periodicals
- SCE Engineering Drawings
- United States Geological Survey (USGS) Historical Topographic Map Collection
- Other data repositories as identified through research

BUILT ENVIRONMENT INVENTORY

- Conduct field inspection and documentation of historic period (i.e., 50 years old or older) built environment resources (i.e., buildings, structures, and objects) and resources that will be historic in age at the time of relicensing (i.e., minimally 45 years old at the time of the study) located within the APE.
  - The inventory will be conducted by qualified, professional individuals meeting the Secretary of the Interior's Professional Qualification Standards for Architectural History and History (36 CFR Part 61).
- Record and/or update historic-period-built environment resources within the APE to current California Department of Parks and Recreation standards (DPR 523 series). This will include digital color photography and sketch maps of individual features that show the relationship between buildings and structures.
- Assess historic-period-built environment resources within the APE identified during the study as a system/district, as well as on an individual basis.

NRHP EVALUATION ELIGIBILITY

- Evaluate historic-period-built environment resources in the Project APE for eligibility to the NRHP under the criteria for listing in the NRHP. Evaluation will include consideration of both individual eligibility and potential of eligibility as a historic district.
- Specifically, the Study plan will update the Kern River No. 1 Historic District evaluation (Collum 1999; Mikesell 1988; Taylor 1994; White and Taylor 1989). Effort will include reevaluation of the existing evaluation, as well as identifying and evaluating any other potential contributors that may not have been identified and evaluated during the previous relicensing.
- Evaluation will utilize appropriate guidance including *NRHP Bulletin 15: How To Apply the NRHP Criteria for Evaluation* (NPS 1995).

REPORTING AND CONSULTATION

- Study methods and results will be documented in a CUL 1 – Built Environment Technical Memo. To ensure compliance with FERC reporting requirements and with the standards of Section 106 of the NHPA, the technical memo will include the following sections: (1) Study Goals and Objectives; (2) Study Methods; (3) Study Results (including eligibility recommendations); and (4) Variances from the FERC-approved Study Plan. In addition, the technical memo will include the following information, as appropriate:
    - Project location and description
    - Regulatory nexus
    - Historic context for the Study Area
    - Mapping depicting the location of built environment cultural resources within the APE
    - NRHP inventory and evaluation of historic-period-built environment resources in the APE
    - An appendix containing updated and/or new DPR Series 523 forms for each built environment cultural resource, individually and collectively as a district, as appropriate.
- A draft technical memo will be distributed to the TWG for review and comment. Comments on the draft technical memo will be addressed in a final technical memo, which will be included in the Draft License Application. Any sensitive information will be included in a confidential appendix withheld from public disclosure, in accordance with Section 304 (16 USC 4702-3) of the NHPA and the Archaeological Resources Protection Act. The California Public Records Act similarly exempts site data from disclosure while Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality related to any information submitted by an American Indian Tribe during the environmental review process.
- The review and comment period for the technical memo is identified below in the Schedule.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will develop a Historic Properties Management Plan (HPMP) that utilizes the analysis and results of the Technical Study Plan to develop a framework for management of historic properties in the APE that may be affected by the undertaking. The HPMP will align with the standards of Section 106 and FERC Guidelines for HPMP development.

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
June 2023–March 2024	Meet with the TWG to discuss Draft Study Plan and adequacy of the APE
June 2023–March 2024	Consult with SHPO regarding adequacy of the APE
January 2024	Submit Built Environment technical qualifications to Sequoia National Forest for permit
April–December 2024	Conduct archival research
April–October 2024	Conduct fieldwork
October 2024–January 2025	Compile results of research and fieldwork and prepare draft technical memo
January 2025	Distribute draft technical memo to TWG
February–April 2025	TWG review and provide comment on draft technical memo
April–June 2025	Resolve comments and prepare final technical memo
April–October 2025	Develop Draft HPMP
December 2025	Distribute final technical memo and Draft HPMP in Draft License Application

REFERENCES

Collum, Nicole. 2009. Kern River No. 1 Stable Historic American Engineering Record. Prepared for Southern California Edison. Rosemead, California. Galvin Preservation Associates, Redondo Beach, California.

Kovak, Amy and Thomas Jackson. 2010. Cultural Resources Inventory Report of Access Roads and Flume Sections Associated with the Kern River No. 1 Hydroelectric Project. Prepared for Southern California Edison, Rosemead, California. Pacific Legacy, Inc., El Dorado Hills, California.

Mikesell, Stephen D. 1988. Historic Resource Evaluation Report, Kern River No. 1 Power House, 6-KER-178, 15.3, 06-275701. California Department of Transportation, Office of Environmental Analysis, Sacramento, California.

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CUL 2 – ARCHAEOLOGY
TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
CUL 2 – Archaeology

POTENTIAL RESOURCE ISSUES

- Management of archaeological resources and other historic properties within the Project's Area of Potential Effects (APE).

PROJECT NEXUS

The Federal Energy Regulatory Commission's (FERC) decision to issue a new license is considered an "undertaking" pursuant to 36 Code of Federal Regulations (CFR) § 800.16(y). The National Historic Preservation Act (NHPA) of 1966, as amended, requires Federal agencies to consider the effects of undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on those undertakings.

Project operation and maintenance (O&M) activities could potentially affect archaeological resources by:

- Affecting those qualities that make the property eligible for inclusion in the National Register of Historic Places (NRHP).
    - Adverse effects are codified in 36 CFR 800.5 and can be direct, indirect, or cumulative.

RELEVANT INFORMATION

The following information is available regarding archaeological resources including historic properties in the vicinity of the Project. See Pre-Application Document (PAD) Section 3.13, Cultural Resources for a summary of available archaeological resource information.

- Records search information from the ArcGIS Online (AGOL) database maintained by SCE, received October 10, 2022. The database includes heritage data from the Forest Service Heritage Programs in Region 5 within the SCE service territory and subscription data from the California Historical Resources Information System (CHRIS). The CHRIS provides detail regarding previous survey and documentation in the vicinity of the Project (inclusive of FERC Project boundary and a half-mile record search Study Area).

- Native American Heritage Commission (NAHC) Sacred Lands File (SLF) for the Project area, received on November 10, 2022 (NAHC 2021). The NAHC SLF provides an inventory of Native American resources and sacred sites.

- *Historic Resource Evaluation Report, Kern River No. 1 Powerhouse* (Stephen Mikesell 1988). Built Environment evaluation report for the Kern River No. 1 Powerhouse.

- *Cultural Resources Management Plan for Southern California Edison Company's Kern River No. 1 Hydroelectric Project, Kern County, California, FERC Project No. 1930* (SCE 1993). The Management Plan provides documentation and background information on the known historic properties in the Project Boundary and current SCE management responsibilities and requirements for cultural resources.

- *Cultural Resources Inventory of Pacific Gas and Electric Company's Kern Canyon Project and National Register of Historic Places Evaluation of Pacific Gas and Electric Company's Kern Canyon Powerplant, Pacific Gas and Electric Company's Kern Canyon Project, FERC No.178, Kern County, California* (Pacific Legacy 2002). The report documents the archaeological and built-environment resources at the Kern Canyon Powerplant.

- *An Inventory and Evaluation of Archaeological and Historic Resources along the Kern River in the Vicinity of Democrat Hot Springs, Kern County, California, for the Proposed SCE Democrat Hydroelectric Project* (White and Taylor 1984). The report documents the archaeological and built-environment resources near Democrat Hot Springs.

- *Cultural Resources Inventory Report of Access Roads and Flume Sections Associated with the Kern River No. 1 Hydroelectric Project* (Kovak and Jackson 2012). The report documents the most recent inventory of Project roads and flumes.

- Background studies that include several major archaeological and geoarchaeological overviews, and studies conducted in the region by Leach-Pal et al. (2010), Meyer et al. (2010), and Theodoratus (1984).

POTENTIAL INFORMATION GAPS

- Updated physical documentation and information on known archaeological resources located within the APE.

- Intensive archaeological surveys of the APE using current protocols.

- NRHP evaluations or updated evaluations of archaeological resources that could be potentially affected by Project O&M activities (Undertaking).

STUDY OBJECTIVES

- Document known and currently undocumented archaeological resources within the APE.

- Evaluate or, as appropriate, provide update evaluation(s) under the criteria of the NRHP for archaeological resources in the APE to determine whether archaeological resources may be affected by O&M of the Project and/or develop a NRHP evaluation plan to be implemented as part of the Historic Properties Management Plan (HPMP).

EXTENT OF STUDY AREA AND AREA OF POTENTIAL EFFECT

- For archaeological resources, the Study Area includes the area within 0.5 mile of the APE (Map 3.13-1).
    - This Study Area will be used only for records searches and archival research to develop contextual and background information.
- Under Section 106 of the NHPA, the APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR § 800.16[d]). Additionally, the ACHP and the California Office of Historic Preservation has provided guidance for Federal agencies and their delegated licensees to consider potential effects that:
    - May occur immediately and directly.
    - Are reasonably foreseeable or may occur later in time.
    - Are farther removed in distance and potentially affected indirectly.
    - Include cumulative effects that may result from the undertaking.
- The proposed APE for the purposes of study implementation is defined as the area within the FERC Project boundary, a 25-foot buffer from centerline of the access trails located outside of the FERC boundary, and a 50-foot radius around FERC ancillary facilities such as gauges located outside of the FERC boundary (Map 3.13-1).
- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain) or on private property for which SCE has not received specific approval from the landowner to enter the property to perform the study.
- The Study Area and APE may be expanded during the relicensing proceeding, in consultation with the cultural resources Technical Working Group (TWG).

STUDY APPROACH

The Archaeology Technical Study will involve a multi-step process that includes: (1) establishing the APE; (2) a detailed review of previous studies and site records; (3) archival research; (4) field surveys/inventory, including recording and mapping resource locations and resource condition assessments; (5) NRHP evaluations and update of previous evaluations, as appropriate; and (6) technical study reporting and consultation with the TWG. Specific tasks that will be implemented during each step are described below.

ESTABLISH APE

- Submit the proposed APE on the behalf of FERC to the Tribes and the State Historic Preservation Officer (SHPO) for comments on the adequacy of the APE pursuant to 36 CFR § 800.16[d]). The APE may be expanded during the relicensing proceeding if any refinement/modification of the Project results in utilizing additional lands outside the APE.

REVIEW OF PREVIOUS STUDIES AND SITE RECORDS

- Review previous investigations, survey reports, and site records to identify the methods and protocols that were used to inventory archaeological resources in the APE and whether there are previously identified archaeological resources that require updated documentation to align with current standards for adequacy.

ARCHIVAL RESEARCH

- Conduct archival research at the following repositories to obtain additional information specific to the prehistory, ethnography, and history in the vicinity of the Project. This research will build upon the existing studies to support necessary NRHP evaluation of archaeological resources in the APE. Archival research may include the following sources and other sources and repositories identified through research undertaken as part of the study:

    - California State Library, California History Room, Sacramento
    - California State University Bakersfield, Historical Research Center
    - Huntington Library, SCE Records, and Photographs and Negatives, San Marino
    - Kern County Museum, Bakersfield
    - Kern County Historical Society, Bakersfield
    - Native American Heritage Commission
    - Records from the Sequoia National Forest (SQF), Porterville
    - Southern California Edison Archaeological Records
    - Southern San Joaquin Valley Information Center, California State University, Bakersfield
    - UCLA Fowler Museum, Los Angeles
    - Other online repositories as applicable

ARCHAEOLOGICAL INVENTORY

- As described in 36 CFR § 800.4(b)(1), a field survey will be performed in accordance with the *Secretary of the Interior's Standards and Guidelines for Identification* to verify locations of previously recorded archaeological resources within the APE and to examine all accessible lands not previously subject to adequate survey within the APE or that need to be resurveyed to meet current professional standards (NPS 1983).

- Qualified professional archaeologists (i.e., individuals who meet the Secretary of the Interior's Professional Qualifications Standards for Archaeology [NPS 2021]) will supervise and participate in all field work.

    - During the survey, archaeologists will walk parallel transects spaced at no more than 30-meters as vegetation and terrain allow.

- Previously recorded archaeological sites within the APE will be relocated, and their site records will be updated only if the existing documentation does not meet current standards for recording or if the condition and/or integrity of the property has changed since its previous recording.

- Newly discovered archaeological resources within the APE, including isolated finds, will be documented following the documentation procedures outlined in *Instructions for Recording Historical Resources* (OHP 1995), which utilizes California Department of Parks and Recreation (DPR) Forms 523 A through L. Sketch maps will be drawn to-scale, and the resource will be photographed.

- All previously documented NRHP-eligible and unevaluated cultural resource sites in and adjacent to the APE will be inspected and updated according to the TSP and SQF archaeological permit.

- Inspected sites will be completely examined, with at least broad-scale observations made for portions of the site extending beyond the survey area, unless otherwise negotiated with the Forest HPM (or delegate).

- All newly identified sites, including portions outside the APE, will be completely documented. In the case of historic roads or trails, documentation will extend at least to the nearest intersection with a paved road, an intersection with another road or trail, or the National Forest boundary.

- Field personnel will use a Global Positioning System (GPS) receiver to document the location of archaeological resources (including isolates) within the APE, which will be plotted onto the appropriate U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle using the Universal Transverse Mercator (UTM) coordinate system.

    - GPS data collection will adhere to the SQF specifications for accuracy and site-specific procedures where applicable. Additionally, the areas examined will be

plotted onto the appropriate USGS 7.5-minute topographic quadrangle for comparison with previous survey coverage maps.

- Archaeological surveys that occur on SQF lands will require valid Organic Act permits. Any ground disturbing testing that occurs on SQF lands will require valid Archaeological Resources Protection Act permits. SCE or their consultants will obtain all required permits prior to beginning field work and will notify the SQF when field work is scheduled.

- Representative examples of time diagnostic artifacts will be photographed and described. All artifacts encountered during the field survey will be left in place; no artifacts will be collected during the field survey.

- A field report will be submitted to the SQF according to stipulations in the archaeological permit.

NRHP ELIGIBILITY EVALUATION:

- NRHP evaluations will focus on resources within the APE that may be adversely affected by Project O&M activities. The evaluation strategy will be developed in consultation with the TWG. Applicable archaeological permits will be obtained from the SQF.

- Evaluations will be documented on appropriate DPR 523 series forms and will utilize appropriate guidance including *NRHP Bulletin 15: How To Apply the NRHP Criteria for Evaluation* (NPS 1995).

REPORTING AND CONSULTATION:

- Study methods and results will be documented in a CUL 2 – Archaeology Technical Memo. To ensure compliance with FERC reporting requirements and with the standards of Section 106 of the NHPA, the technical memo will include the following sections: (1) Study Goals and Objectives; (2) Study Methods; (3) Study Results (including eligibility recommendations); and (4) Variances from the FERC-approved Study Plan. In addition, the technical memo will include the following information, as appropriate:

  - Project location and description;

  - Regulatory nexus;

  - Pre-contact, ethnographic, and historic-era context for the Study Area;

  - Traditional Tribal place names for areas of the Project will be incorporated into site records and the Archaeological Technical Memo;

  - Generalized maps showing the location of archaeological resources with respect to the APE;

  - Detailed maps that depict the following on USGS 1:24,000 topographic maps: survey area and coverage types (intensity); and the locations of all resources identified during the study; and

  - An appendix containing updated and/or new DPR Series 523 forms for each archaeological resource in the APE.

- A draft technical memo will be distributed to qualified TWG members for review and comment. Sensitive information will be included in a confidential appendix withheld from public disclosure, in accordance with Section 304 (16 USC 4702-3) of the NHPA and the Archaeological Resources Protection Act. The California Public Records Act similarly exempts site data from disclosure while Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality related to any information submitted by a Tribe during the environmental review process. Comments on the draft technical memo will be addressed in a final technical memo, which will be included in the Draft License Application.

- The review and comment period for the technical memo is identified below in the Schedule.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will develop a HPMP that utilizes the analysis and results of the Technical Study Plan to develop a framework for management of historic properties in the APE that may be affected by the undertaking. The HPMP will align with the standards of Section 106 and FERC Guidelines for HPMP development.

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
June 2023–March 2024	Meet with the TWG to discuss Draft Study Plan and adequacy of the APE
June 2023–March 2024	Consult with SHPO regarding adequacy of the APE
January 2024	Submit Archaeological technical qualifications to Sequoia National Forest for permit
April–December 2024	Conduct archival research
April–October 2024	Conduct fieldwork
October 2024–January 2025	Compile results of research and fieldwork and prepare draft technical memo
January 2025	Distribute draft technical memo to TWG
February–April 2025	TWG review and provide comment on draft technical memo
April–June 2025	Resolve comments and prepare final technical memo

Date	Activity
April–October 2025	Develop Draft HPMP
December 2025	Distribute final technical memo and Draft HPMP in Draft License Application

REFERENCES

Kovak, Amy, and Thomas L. Jackson. 2012. *Cultural Resources Inventory Report of Access Roads and Flume Sections Associated with the Kern River No. 1 Hydroelectric Project*. Prepared for Southern California Edison, Rosemead, California. Pacific Legacy, Inc., El Dorado Hills, California.

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TRI 1 – TRIBAL RESOURCES TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
TRI 1 – Tribal Resources

POTENTIAL RESEARCH ISSUES

- Tribal resources potentially affected by the Project, including properties of traditional religious and cultural importance to an Indian tribe (commonly referred to as Traditional Cultural Properties [TCP[1]]).

PROJECT NEXUS

The Federal Energy Regulatory Commission's (FERC) decision to issue a new license is considered an undertaking pursuant to 36 Code of Federal Regulations (CFR) § 800.16(y). The National Historic Preservation Act (NHPA) of 1966, as amended, requires Federal agencies to consider the effects of undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on those undertakings. Proposed Project activities could potentially affect Tribal resources by:

- Endangering those qualities that make the property eligible for inclusion in the National Register of Historic Places (NRHP) or that hold significant cultural value.

RELEVANT INFORMATION

The following information is available to characterize Tribal resources in the vicinity of Project. See Pre-Application Document (PAD) Section 3.13, Cultural Resources and Section 3.14, Tribal Resources for a summary of available cultural resource and Tribal resource information.

- NAHC Sacred Lands File for the Project, received on November 10, 2022 (NAHC 2022).

- Fourteen cultural affiliations/heritage associations have been identified based on information provided by the NAHC and extracting data from mid-late 20th century ethnographic work in the Project vicinity.

- Key available ethnographic literature regarding Tubatulabal includes Davis-King et al., 2010; Stephen Powers, 1976; Smith, 1978; C. Voegelin, 1935a, 1935b; E. Voegelin, 1938; Gehr and Conlan 1984; and J.P. Harrington (nd).

- Local historian, Bob Powers (1974, 1979, 1980, 1989, 1999, 2003) provided extensive summaries of historic and American Indian issues in the region, particularly regarding Tubatulabal and Kawaiisu peoples.

[1] A TCP is a property that is eligible for inclusion in the NRHP based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community (Parker and King 1990, 1998).

- Yokuts sources include Latta (2014), who specifically discusses Yowlumne lifeways; more general information is from Wallace (1978) on Southern Valley Yokuts and Spier (1978) on Foothill Yokuts. Gayton (1929,1930, 1945, 1946) discusses various aspects of Yokuts life; her monograph on Yokuts and Mono peoples is an important source.

- The Garcés Diary (Coues, 1900) of pre-statehood exploration in the Study Area provided details about lifeways, trade patterns, and cultural affiliations.

- Numerous named places known in the Project vicinity have been identified to include villages, gathering locales, sacred areas, burial grounds, fishing locales, and hunting grounds.

These background data are applicable to a broader territory than lands in the vicinity of the Project, as there has not been an American Indian ethnographic investigation to date of the immediate Kern River No. 1 Hydroelectric Project.

POTENTIAL INFORMATION GAPS

- Ethnohistory of lands in the vicinity of the Project (study area).

- Archival research and interviews to identify Tribal resources within the Area of Potential Effects (APE) (see Extent of Study Area section).

- NRHP evaluations of Tribal resources that could be potentially affected by O&M the Project (Undertaking).

- Tribal resources of value that may not be historic properties, but nonetheless are to be considered.

STUDY OBJECTIVES

- Communicate and consult with Tribes regarding the Project.

- Develop an ethnohistory associated with lands in the vicinity of the Project (study area) which will be used to assist in identification and evaluation of Tribal resources.

- Identify and document Tribal resources in the vicinity of the Project. Characterize Tribal values and resources from a Tribal perspective through outreach and contact with Tribal governments and their representatives.

- Evaluate Tribal resources, as appropriate, to determine if they are eligible for listing on the NRHP and determine whether these resources will be affected by actions of the Proposed Project.

EXTENT OF STUDY AREA AND AREA OF POTENTIAL EFFECT

- For Tribal resources, the study area includes the area within 5 miles of the APE (Map 3.14-1).
    - This study area will be used only for archival research and interviews to develop contextual and background information.
- Under Section 106 of the NHPA, the APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR § 800.16[d]). Additionally, the ACHP and the California Office of Historic Preservation (OHP) has provided guidance for Federal agencies and their delegated licensees to consider potential effects that:
    - May occur immediately and directly;
    - Are reasonably foreseeable or may occur later in time;
    - Are farther removed in distance and potentially affected indirectly; and
    - Include cumulative effects that may result from the undertaking.
- The proposed APE for the purposes of study implementation is defined as the area within the FERC Project boundary, a 25-foot buffer from centerline of the access trails located outside of the FERC boundary, and a 50-foot radius around FERC ancillary facilities such as gauges located outside of the FERC boundary (Map 3.14-1).
- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain) or on private property for which SCE has not received specific approval from the landowner to enter the property to perform the study.

STUDY APPROACH

The Tribal Resources Technical Study involves a multi-step process that includes: (1) meet with Tribal groups and resource agencies to discuss Proposed Study Plan and adequacy of the APE; (2) archival research; (3) meetings with Tribal governments; (4) interviews; (5) documentation and evaluation; and (6) technical study reporting and consultation. Specific tasks that will be implemented during each step are described below.

ESTABLISH APE

- Submit the proposed APE, on behalf of FERC, to State Historic Preservation Officer (SHPO) for comments on the adequacy of the APE pursuant to 36 CFR § 800.16[d]). The APE may be expanded during the relicensing proceeding if any refinement/modification of the Proposed Project results in utilizing additional lands outside the APE.

ARCHIVAL RESEARCH

- Conduct archival research at repositories to obtain additional information specific to the prehistory, ethnography, and history associated with the study area. The results of the archival research will: (1) provide primary data to create an American Indian ethnohistory including maps depicting Tribal territories and traditional use areas in the study area; and (2) develop the Tribal resources historic context which will be used in identification and evaluation of Tribal resources within the APE for the NRHP. The Tribal resources team will conduct background archival research of the study area, which may include the following:

    - Annie Mitchell Local History Research Room, Tulare County Library, Visalia
    - California State Library, California History Room
    - Harrington (n.d.) fieldnotes (available online)
    - Hulse and Essene (Bancroft Library, Berkeley and elsewhere)
    - Kern County Museum, Bakersfield
    - Kern County Historical Society, Bakersfield
    - California State University Bakersfield Archives
    - National Archive and Records Administration (Riverside and San Bruno)

MEETINGS WITH TRIBAL GOVERNMENTS

Meetings with Tribal governments/administrators and/or attendance at Tribal Council meetings (if approved), will provide Project information to Tribal groups, elicit areas of interest, identify appropriate Tribal contacts, and establish protocols for conveying information gathering activities. To date, 14 American Indian Tribes have been identified as having potential interests in the Project area. These are listed below (in alphabetical order):

- Big Pine Paiute Tribe of Owens Valley
- Chumash Indian Council of Bakersfield
- Fort Independence Indian Community of Paiute Indians/ Fort Independence Reservation
- Kawaiisu Tribe
- Kern Valley Indian Community
- Kitanemuk & Yowlumne Tejon Indians
- Kings River Choinumne Farm Tribe (Foothill Yokut)

- Lone Pine Paiute-Shoshone Tribe
- Santa Rosa Indian Community of The Santa Rosa Rancheria
- Tachi Yokut Tribe
- Tejon Indian Tribe
- Tübatulabals of Kern Valley
- Tule River Indian Tribe of California
- Wuksache Indian Tribe/Eshom Valley Band

The Tribal resource investigation will make a good-faith effort at proper communication with Tribal leaders as laid out in FERC's Policy Statement on Consultation with Indian Tribes in Commission Proceedings, issued July 23, 2003 (Docket No. PL03-4-000; Order No. 635; FERC 2003). The investigation will also follow the FERC regulations at 18 CFR § 2.1c, which added a policy statement on consultation with Tribes in FERC proceedings.

INTERVIEWS

Interviews are critical for identification, description of significance, and evaluation of Tribal resources. Interviews with Tribal members provide understanding about what is important to them and why. Knowledgeable individuals from each of the interested Tribes will be interviewed, as willing. The methods and nature of the interviews are expected to vary from person to person: some may be held in the field, others held in private homes, and still others held via telephone/teleconference. Interview records are similarly likely to be variable regarding confidentiality protocols and the interviewee's willingness to share. Recording methods (handwritten notes, video, audio tape, etc.) will be determined by consulting with the interviewee.

All phases of the Tribal resource investigation will be conducted in accordance with the American Indian community consultation standards outlined by the implementing regulations of Sections 101 and 106 of the NHPA and discussed in the 2012 ACHP publication *Consultation with Indian Tribes in the Section 106 Review Process: A Handbook*.

DOCUMENTATION AND EVALUATION

Three main categories of Tribal resources may be present in the APE and documented and evaluated as described below.

- **Tribal Places** are locations associated with the ancestral past, places related to current gathering and/or hunting practices or to consist of other resource types. Those that qualify as potential historic properties will be documented on California Department of Parks and Recreation (DPR) 523 forms as appropriate and with Tribal permission, while others will be described in the TRI 1 – Tribal Resources Technical Memo.

- **TCPs** will be documented on DPR 523 forms as appropriate and with permission of the community who has identified the TCP.

- **Tribal Government Resources** such as documentation of Indian allotments located within the study area will be documented in the TRI 1 – Tribal Resources Technical Memo.

Because Tribal resources include both natural and cultural resources, coordination with other resource studies may be necessary to identify and evaluate Tribal resources fully. These will be considered in the study analysis such as the examples listed below.

- The location of culturally important plant species identified by American Indian Tribes may be incorporated into the TRI 1 – Tribal Resources Technical Memo, as appropriate, and shared with the botanical resources study team.

- Information about culturally important aquatic species, including fisheries, identified by American Indian Tribes may be incorporated into the TRI 1 – Tribal Resources Technical Memo, as appropriate, and shared with the proposed aquatic resources study team.

- Information about culturally important terrestrial animal species identified by American Indian Tribes may be incorporated into the TRI 1 – Tribal Resources Technical Memo, as appropriate, and shared with the proposed terrestrial resources study team.

- The locations of culturally important plant and/or animal species may be considered in the recreation and land use studies, to the extent possible without divulging confidential information.

- Information on sites associated with prehistoric and ethnographic-period American Indian occupation and use of the landscape will be identified in both the CUL 2 – Archaeological Resources Technical Memo and TRI 1 – Tribal Resources Technical Memo.

Resources within or adjacent to the APE will be documented and described according to Tribal values and submitted for review to Tribal representatives. NRHP evaluation of Tribal resources suitable for DPR 523 documentation will use site-specific procedures to identify historic context of the resource, the boundaries, the jurisdiction or land ownership, the Tribal significance, integrity from a Tribal perspective, and contributing characteristics. Evaluation of other resource types may occur at the managerial or agency level.

NRHP evaluations will be conducted in adherence with National Register Bulletin No. 15, *How to Apply the National Register Criteria for Evaluation* (NPS, 1995), National Register Bulletin No. 38, *Guidelines for Evaluating and Documenting Identification of Traditional Cultural Properties* (Parker and King 1990, 1998), and National Register Bulletin 30, *Guidelines for Evaluating and Documenting Rural Historic Landscapes* (NPS, 1998).

TECHNICAL STUDY REPORTING AND CONSULTATION

- Study methods and results will be documented in a TRI 1 – Tribal Technical Memo. A draft technical memo will be distributed to the Tribal Resources Technical Working Group (TWG) for review and comment. Comments on the draft technical memo will be addressed in a final technical memo, which will be included in the Draft License Application. The draft and final technical memo will include a summary of the information and findings of the technical studies.

- The technical memo will include: (1) regulatory, environmental, and cultural contextual statements; (2) a discussion of research methods; (3) a discussion of Tribal resources; (4) inclusion of Tribal place names; (5) a description and evaluation of resources that are assessed as potential historic properties; and (6) management considerations.

- With Tribal member permission, Tribal resource documentation would be included as public information or included in a confidential appendix withheld from public disclosure, in accordance with Section 304 (16 USC 4702-3) of the NHPA and the Archaeological Resources Protection Act. The California Public Records Act similarly exempts site data from disclosure while Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality related to any information submitted by an American Indian Tribe during the environmental review process.

- The review and comment period for the technical memo is identified below in the Schedule.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will develop a Historic Properties Management Plan (HPMP) that utilizes the analysis and results of the Technical Study Plan to develop a framework for management of historic properties in the APE that may be affected by the undertaking. The HPMP will align with the standards of Section 106 and FERC Guidelines for HPMP development.

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
June 2023–March 2024	Meet with the TWG to discuss Draft Study Plan and adequacy of the APE
June 2023–March 2024	Consult with SHPO regarding adequacy of the APE
January 2024	Submit Tribal Resources technical qualifications to Sequoia National Forest
April–December 2024	Conduct archival research
April–October 2024	Engage Tribal groups to arrange meetings and establish protocols
April–October 2024	Conduct Tribal interviews to identify Tribal resources

Date	Activity
October 2024–December 2025	Compile results of data gathered, evaluate Tribal resources, and prepare draft technical memo
December 2025	Distribute draft technical memo to TWG
February–April 2025	TWG review and provide comment on draft technical memo
April–June 2025	Resolve comments and prepare final technical memo
April–October 2025	Develop Draft HPMP
December 2025	Distribute final technical memo and Draft HPMP in Draft License Application

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LAND 1 – ROAD AND TRAIL CONDITION ASSESSMENT TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
LAND 1 – Road and Trail Condition Assessment

POTENTIAL RESOURCE ISSUES

- Project road and trail maintenance.
- Erosion on or adjacent to Kern River No. 1 Hydroelectric Project (Project) roads and trails may deliver sediment to adjacent drainages.
- Protection of resources during Project operation and maintenance (O&M) activities.

PROJECT NEXUS

- Roads and trails on Forest Service, Sequoia National Forest (SQF) and SCE owned lands are necessary to access Project facilities and conduct O&M of the Project.
- SCE is responsible for maintaining Project roads and trails.
- Identification of erosion or sources of sediment from roads or trails. Refer to the LAND 2 – Erosion and Sedimentation Technical Study Plan regarding runoff from roads with potential to affect stream drainages.

RELEVANT INFORMATION

The following information was reviewed to determine Project road and trail study needs. See Pre-Application Document (PAD) Section 2.0, Project Location, Facilities, and Operations for a summary of the existing Project roads and trails:

- The list of Project Facility Access Roads and Trails identified in PAD Table 2-3.
- Maintenance activities associated with Project roads and trails as summarized in Section 2.0.
- Federal Energy Regulatory Commission (FERC) Project boundary information as shown on Exhibit G of the Project license.

POTENTIAL INFORMATION GAPS

- Information on existing Project road and trail conditions in relation to applicable maintenance standards.
- Information on public use of Project roads and trails within the FERC Project boundary.

STUDY OBJECTIVES

- Document current Project road and trail conditions by conducting a reconnaissance-level inventory.

- Document SCE's current maintenance practices and frequency of use along Project roads and trails.

EXTENT OF STUDY AREA

The Study Area includes Project roads and trails that are used to access Project facilities to conduct O&M activities. A list and description of Project roads and trails is provided in Table 2-3 and shown on Maps 2-3a-g in the PAD.

STUDY APPROACH

STUDY-SPECIFIC CONSULTATION

- Consult with the SQF on approach for reconnaissance-level inventory on Project roads and trails.

- If available, obtain additional road and trail information from the SQF and incorporate information into the desktop analysis.

DESKTOP ANALYSIS

- With support from SCE O&M staff, characterize SCE's frequency of use of Project roads and trails, frequency and type of maintenance activities, and location and size of culverts or other drainage features.

- Use desktop geographic information system (GIS) to compile data of available road features (i.e., culverts) and develop annotated maps for use during the reconnaissance level condition assessment.

RECONNAISSANCE-LEVEL CONDITION ASSESSMENT

- Road Inventory

    - Conduct a road assessment to characterize the current condition of Project roads. Project roads will be surveyed with respect to Forest Service criteria for the assigned maintenance level (Forest Service 2005, 2014) to assess the current condition relative to prescribed maintenance levels and standards.

    - The assessment will include the collection of the following information:

        - Land ownership/jurisdiction;

        - Road name;

        - Beginning and end points, and overall length;

- Average width;
- Surface type (e.g., paved, gravel, dirt);
- Overall road condition, including identification or issues pertaining to condition such as active erosion, potholes, ruts, loose aggregate, missing aggregate, cracking, debris, and excessive vegetation;
- Location of natural resource features that may occur along Project roads, such as stream crossings or riparian areas;
- Location, size, and condition of drainage and erosion control features such as culverts, water bars, and other drainage features;
- Location of areas experiencing erosion;
- Location, type, and condition of signs (i.e., safety, traffic control, or informational);
- Location and condition of access control features and barriers such as gates and other closure methods.

  - Road features will be photographed and located using a sub-meter Global Positioning System (GPS) unit, and the data will be incorporated into the Project GIS database for tabulation, analysis, and mapping.
  - Describe SCE's maintenance practices and frequency of activities, including culvert clearing, vegetation management, and avoidance measures for the protection of sensitive resource areas.

- Trail Inventory
  - Conduct a trail assessment to characterize the current condition of Project trails. The assessment will include the collection of the following information:
    - Land ownership/jurisdiction;
    - Trail name;
    - Location and condition of trailhead(s), if appropriate;
    - Beginning and end points, and overall length;
    - Average width;
    - Average slope;
    - Presence/absence of safety features such as hand rails;

- Overall condition, including identification of issues pertaining to condition such as rutting, loose aggregate, obstacles, and excessive vegetation;
- Location, size, and condition of culvert and other drainage features, if applicable;
- Location of areas experiencing erosion, if any;
- Location and condition of access control features and barriers such as gates and other closure methods;
- Location of water crossings, if applicable;
- Observed public recreational use (e.g., hiking); and
- Resource concerns.

- Trail features will be photographed and located using a sub-meter Global Positioning System (GPS) unit, and the data will be incorporated into the Project GIS database for tabulation, analysis, and mapping.

REPORTING

- Study methods and results will be documented in a LAND 1 – Road and Trail Condition Assessment Technical Study Memo (TSM). The TSM will include an inventory and assessment of the selected roads and trails and appurtenant features, including applicable maps and data tables. Stakeholder review and comment period for the TSM is identified below in the Schedule.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–August 2024	Conduct desktop reconnaissance and field surveys
September 2024–December 2024	Analyze data and prepare draft technical memo
January 2025	Distribute draft technical memo to stakeholders
February 2025–April 2025	Stakeholders review and provide comments on draft technical memo (90 days)
May–June 2025	Resolve comments and prepare final technical memo
December 2025	Distribute final technical memo in Draft License Application

REFERENCES

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LAND 2 – EROSION AND SEDIMENTATION TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
LAND 2 – Erosion and Sedimentation

POTENTIAL RESOURCE ISSUES

- Erosion and sedimentation associated with operation and maintenance (O&M) of the Project.

PROJECT NEXUS

- Routine Project O&M activities have the potential to increase erosion and sediment delivery to nearby drainages. Runoff from hard surfaces such as Project roads, trails, and facilities have the potential to increase surface erosion. Sediment management at Democrat Dam has the potential to increase sediment loading within the bypass reach.

RELEVANT INFORMATION

The following information is available regarding erosion and sedimentation in the vicinity of the Project. See the Pre-Application Document (PAD) Section 3.4, Water Quality and Section 3.8, Geomorphology for a summary of relevant information:

- National Best Management Practices for Water Quality Management on National Forest System Lands (FS-990a). Volume 1: National Core BMP Technical Guide (Forest Service 2012)

- Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014 (FERC 1998)

- Application for New License for the Kern River No. 1 Hydroelectric Project (SCE 1994)

- Incident Report of Landslide Initiated Forebay Spill Kern River No. 1 Project – FERC Project No. 1930 (SCE 2013)

- Sediment Monitoring Results and Sediment Management Plan for the Kern River No. 1 Hydroelectric Relicensing Project, FERC Project No. 1930 (SCE 1999) and Revised Sediment Management Plan for the Kern River No. 1 Hydroelectric Relicensing Project, FERC Project No. 1930 (SCE 2005).

- Kern River No. 3 Pre-Application Document, FERC Project No. 2290 (SCE 2021)

- Plan for Control of Erosion, Stream Sedimentation, Soil Mass Movement, and Dust. Kern River No. 3 Hydroelectric Project FERC No. 2290 (SCE 1997)

POTENTIAL INFORMATION GAPS

- Updated information on Project-related sources of sediment and erosion.

STUDY OBJECTIVES

- Identify historical and existing sources of sediment adjacent to the bypass reach, Democrat Dam Impoundment, water conveyance system, and other Project facilities, including major gullies; areas of vegetation and/or soil loss; hillslope destabilization; and mass wasting.

- Identify and describe historical and existing O&M practices associated with managing accumulated sediment behind Democrat Dam.

- Document erosion and sedimentation associated with SCE's ongoing O&M activities.

- Document natural sources of sediment unrelated to the Project.

EXTENT OF STUDY AREA

- The study area for erosion and sedimentation includes the bypass reach, Democrat Dam Impoundment, water conveyance system, and other Project facilities listed in PAD Table 2-1. Underground and underwater Project facilities will not be evaluated.

- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain) or on private property for which SCE has not received specific approval from the landowner to enter the property to perform the study.

STUDY APPROACH

The approach for identifying historical and existing sediment sources and Project-related erosion areas is described below.

IDENTIFY HISTORIC AND EXISTING SOURCES OF SEDIMENT AND PROJECT-RELATED EROSION AREAS

- Document the location and relative volume of historic and existing sediment recruitment to stream channels.

    - Significant sediment recruitment, mass wasting, and/or bank erosion sites will be mapped via aerial reconnaissance, ground survey, and/or aerial photography.

    - Identify whether the sources of sediment are derived from natural watershed process or Project-related effects.

    - Generalize whether sediment sources are actively or inactively contributing sediment and if so by how much (e.g., low, moderate, high delivery potential to the stream channel).

  - Review the August 19, 2013, storm event causing a landslide and subsequent Forebay spill. Highway 178 was closed due to multiple slides blocking the roadway (SCE 2013). See Section 3.7, Geology and Soils of the PAD for additional information.

  - Review winter storm cycles of 2022-2023, which have caused debris slides in the Project area/canyon closing Highway 178.

  - Historic and/or ongoing erosion at the Project facilities (including Project reservoirs) will be mapped via aerial reconnaissance, ground survey, and/or aerial photography.

- Summarize past and current sediment management practices at Democrat Dam, including sediment releases into the bypass reach and current permits associated with sediment management practices.

REPORTING

- Study methods and results will be documented in a LAND 2 – Erosion and Sedimentation Technical Study Memo (TSM). The TSM will include summary tables and maps, as appropriate. Stakeholder review and comment period for the TSM is identified below in the Schedule.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–August 2024	Initiate desktop review and field surveys
September 2024–December 2024	Analyze data and prepare draft technical memo
January 2025	Distribute draft technical memo to stakeholders
February 2025–April 2025	Stakeholders review and provide comments on draft technical memo (90 days)
May 2025–June 2025	Resolve comments and prepare final technical memo
December 2025	Distribute final technical memo in Draft License Application

REFERENCES

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TABLES

Table LAND 2-1. Project Facilities

Diversion Dam
Democrat Dam
Impoundment
Democrat Dam Impoundment
Water Conveyance System
Sandbox
Tunnels
Flumes, Conduits, and Adits
Forebay
Forebay Overflow Spillway
Penstock
Powerhouse and Switchyard
Kern River No. 1 Powerhouse and Switchyard
Access Roads
Willow Spring Creek Road (also referred to as Democrat Dam Road)
Powerline Road
Flume No. 1 Road
Dougherty Creek Road
Stark Creek Road
Forebay Operations Area Road
Lower Powerhouse Road
Upper Powerhouse Road
Access Trails
Democrat Gage Trail
Conduit No. 3 Trail
Cow Flat Creek Trail
Steel Flume Trail
Lucas Creek Trail
Dougherty Creek Trail
Stark Creek Trail
Adit 17 & 18 Trail
Overflow Spillway Trail
Skip Hoist / Forebay Trail
Communication and Power Lines
Intake Gatehouse to Flume No. 1 Powerline
Powerhouse to Forebay Communication / Powerline

Gages and Stilling Wells
Kern River near Democrat Springs (USGS Gage No. 11192500 / SCE Gage No. 409)
Kern River No. 1 Conduit near Democrat Springs (USGS Gage No. 11192000 / SCE Gage No. 410)
Kern River near Democrat Springs (USGS Gage No. 11192501; calculated 11192500+11192000)
Stilling Well No. 1
Stilling Well No. 2
Ancillary and Support Facilities
Democrat Dam Area
Buoy Line in Democrat Dam Impoundment
Democrat Dam Intake Gatehouse
Democrat Dam Drainage Tower
Democrat Dam Drainage Tunnel
Democrat Dam Drainage Tunnel Outlet
Democrat Dam Access Walkway
Sandbox Drainage Channel
Gaging Cableway
Water Conveyance
Flume No. 6 Access Platform
Forebay Operations Area
Old Admin Building
Garage No. 1
Garage No. 2
Old Ice House
Water Tank
Aerial Cable Tower
Skip Hoist House and Lower Landing
Skip Hoist Cables and Cart
Skip Hoist Upper Landing
Skip Hoist Upper Landing to Forebay Catwalk
Communication Site
Forebay Operations Area Perimeter Fence
Forebay Perimeter Fence
Powerhouse Area
Machine Shop
Office / Lunchroom
Restroom
Powerhouse and Switchyard Perimeter Fence

REC 1 – RECREATION FACILITY CONDITION ASSESSMENT TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
REC 1 – Recreation Facility Condition Assessment

POTENTIAL RESOURCE ISSUES

- Recreation facility use in the vicinity of the Project.

PROJECT NEXUS

- Forest Service day use areas are located adjacent to the Democrat Dam impoundment and the bypass reach.

RELEVANT INFORMATION

The following information is available regarding recreation in the vicinity of the Kern River No. 1 Hydroelectric Project. See Pre-Application Document (PAD) Section 3.11 Recreation Resources for a description of existing recreation resources.

- Management prescriptions and direction relevant to recreation included in the Sequoia National Forest Land Management Plan (Forest Service 2023)..

- Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014 (FERC 1998)

- Five-Year Recreation Use Report, Kern River No. 1 Hydroelectric Project – FERC No. 1930 (TCW 2005).

- Various state and federal agency websites.

POTENTIAL INFORMATION GAPS

- Updated recreation facility condition assessments at select Sequoia National Forest (SQF) facilities in the vicinity of the Project.

STUDY OBJECTIVES

- Identify, map, and describe public developed recreation facilities in the vicinity of the Project, including capacity.

- Conduct a facility inventory and condition assessment at the public recreation facilities including overflow parking areas, including an evaluation of signage and public safety features; and an assessment of the condition and potential for universal accessibility.

EXTENT OF STUDY AREA

The study area will be focused on public day-use areas in the vicinity of the Project. These day use facilities are owned and operated by the SQF. The recreation day-use facility locations are listed below and shown on Map 3.11-1.

- Democrat Raft Take-out Boating Site

- Upper Richbar Day Use Area
- Lower Richbar Day Use Area
- Live Oak Day Use Area

STUDY APPROACH

Section 3.11 Recreation Resources of the PAD identifies, maps, and describes developed public recreation facilities in the vicinity of the Project, based on data and information readily available from existing information sources. The study element described below will build on the information presented in the PAD.

CONDUCT A FACILITY INVENTORY AND CONDITION ASSESSMENT AT EXISTING PUBLIC RECREATION FACILITIES

A facility inventory and condition assessment will be performed at the four Forest Service day-use areas. SCE will consult with the Forest Service to develop appropriate methods and forms for the inventory and condition assessment. Generally, the study will include an inventory and condition assessment including:

- Inventory of features at the day-use facilities
- Overall day-use facility capacity
- Assessment of the condition of facilities and associated features;
- Characterization of universal accessibility,[1]
- Public safety measures;
- Signage and wayfinding; and
- Site-specific circulation road(s) and parking area(s).

The survey will document facility condition according to Table REC 1-1. All inventories will be documented with photographs and integrated into a GIS database with relevant attributes to facilitate future analysis and on-going assessments.

REPORTING

- Study methods and results will be documented in a REC 1 – Recreation Facility Condition Technical Study Memo (TSM). The TSM will include an inventory and assessment of the selected site facilities and appurtenant features, including applicable maps and illustrations. The memo will discuss findings in relation to the Desired Conditions, Goals, Standards, and Guidelines of the 1988 Sequoia National Forest Land and Resource Management Plan (1988 Forest Plan), and

[1] Universal accessibility will be assessed with reference to the Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG).

the draft 2022 Sequoia National Forest Land Management Plan – pre objection version (revised Forest Plan), as applicable. Stakeholder review and comment period for the TSM is identified below in the Schedule.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–May 2024	Develop facility inventory and condition assessment forms in consultation with the SQF
June 2024–September 2024	Conduct the facility inventory and condition assessment
October 2024–January 2025	Analyze data and prepare draft technical memo
February 2025	Distribute draft technical memo to stakeholders
March 2025–May 2025	Stakeholders review and provide comments on draft technical memo (90 days)
June 2025–July 2025	Resolve comments and prepare final technical memo
December 2025	Distribute final technical memo in Draft License Application

REFERENCES

FERC (Federal Energy Regulatory Commission). 1998. Final Environmental Assessment for Hydropower License. Kern River No. 1 Hydroelectric Project. FERC Project No. 1930-014. California. June 17.

Forest Service (United States Forest Service). 1988. Sequoia National Forest Land and Resource Management Plan. U.S. Department of Agriculture, Forest Service, Sequoia National Forest. March 1988. Accessed: October 2022. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5400303.pdf.

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SCE (Southern California Edison Company). 1994. Application for New License for the Kern River No. 1 Hydroelectric Project, FERC Project No. 1930. Kern County, California. April 28.TCW TCW Economics. 2005. Report on Five Year Recreation Use Monitoring Study for the Kern River No. 1 Hydroelectric Project (FERC No. 1930). Prepared for Southern California Edison, Hydro Generation Division, 300 North Lone Hill, San Dimas, CA 91773. Prepared by TCW Economics, 27569th Ave. Sacramento, CA. December 2005.

TABLES

Table REC 1-1. Facility Feature Condition Rating Table

ID	Category	Description
N	Need Replacement	Facility feature is non-functional or has broken or missing components.
R	Needs Repair	Facility feature has structural damage or is in an obvious state of disrepair.
M	Needs Maintenance	Facility features needs maintenance, such as cleaning or painting.
G	Good Condition	Facility feature is functional and well maintained.

REC 2 – RECREATION FACILITY USE ASSESSMENT TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
REC 2 – Recreation Facility Use Assessment

POTENTIAL RESOURCE ISSUES

- Recreation use and opportunities in the vicinity of the Project.
- Public safety.

PROJECT NEXUS

- Forest Service day use areas are located adjacent to the Democrat Dam impoundment and the bypass reach.

RELEVANT INFORMATION

The following information is available regarding recreation in the vicinity of the Project. See the Pre-Application Document (PAD) Section 3.11, Recreation Resources for a summary of relevant information:

- Management prescriptions and direction relevant to recreation included in the Sequoia National Forest Land Management Plan (Forest Service 2023).
- Five-Year Recreation Use Report, Kern River No. 1 Hydroelectric Project – FERC No. 1930 (TCW 2005).
- National Visitor Use Monitoring (NVUM) Reports for the Sequoia National Forest[1]
- California's 2021-2025 Statewide Comprehensive Outdoor Recreation Plan (California State Parks, 2020).
- Safety-related information that may be included in the Federal Energy Regulatory Commission (FERC) Environmental Inspection Reports for the Project.
- Safety Incident Reports that may have been filed by SCE, as required by Title 18 of the Code of Federal Regulations §12.10.
- Various state and federal agency websites.
- Various whitewater boating websites.

POTENTIAL INFORMATION GAPS

- Recreation use data associated with developed public recreation facilities in the Project vicinity.

[1] Sequoia National Forest National Visitor Use Monitoring (NVUM) data and reports are available for 2006, 2011, and 2016. 2021 NVUM data is currently being analyzed by the Forest Service. A report will be made available once analysis is complete and posted to the Forest Service NVUM website: https://apps.fs.usda.gov/nvum/results.

- Recreation use data associated with informal (undeveloped) river access locations along SR 178.Recreation use of Project trails.

- Recreation trends and future recreation demand.

- Potential safety issues and existing features or measures implemented to protect the public health and safety.

STUDY OBJECTIVES

- Characterize recreation use at the developed public recreation facilities in the Project vicinity.

- Characterize dispersed recreation use at undeveloped sites along the bypass reach accessible from SR 178.

- Characterize recreation use along Project trails that provide access to the lower Kern River or to an existing Forest Service trail in the vicinity of the Project.

- Estimate future recreation use in the vicinity of the Project using existing use data and published recreation trends information.

- Document potential public safety issues and existing programs and measures that are implemented by SCE to protect public health and safety.

EXTENT OF STUDY AREA

The study area will be focused on public day-use areas in the vicinity of the Project, locations along SR 178 that support dispersed recreation along the bypass reach and select Project trails. The day use facilities in the vicinity of the Project are outside the Project boundary, owned and operated by the Sequoia National Forest (SQF), and not part of SCE's Project license. Likewise, between Democrat Dam and the Kern River No. 1 Powerhouse there are no river access locations within the Project boundary. The developed day use facilities are:

- Democrat Raft Take-out Boating Site

- Upper Richbar Day Use Area

- Lower Richbar Day Use Area

- Live Oak Day Use Area

The Project trails of focus are Democrat Trail – which provides access to the Lower Kern River below the impoundment, and those trails that extend from SR 178 up to the Forest Service trail called "Powerhouse Trail." The Project trails that connect to the Powerhouse Trail are:

- Cow Flat Creek Trail

- Steel Flume Trail
- Lucas Creek Trail
- Dougherty Creek Trail
- Stark Creek Trail

The locations of the recreation day-use facilities and Project trails are shown on Map REC 2-1 (a-e).

STUDY APPROACH

The following describes the approach for: (1) characterizing use of public recreation day-use facilities and use of undeveloped recreation areas along the bypass reach, (2) characterizing use of select Project trails, (3) estimating future recreation use and demand, and (4) documenting public safety and associated measures.

CHARACTERIZE RECREATION USE AT DEVELOPED RECREATION FACILITIES AND AT UNDEVELOPED RECREATION AREAS ALONG THE BYPASS REACH

- Utilize existing information available from SCE and the Forest Service to characterize likely recreation use activities undertaken by visitors at developed public recreation day-use facilities and at undeveloped recreation areas along the bypass reach.
- Document annual recreation use at the developed public recreation day-use facilities and at undeveloped recreation areas along the bypass reach over the most recent 5-year period using Forest Service capacity estimates.
    - Estimate weekday, weekend, and holiday use, if possible, given the information available from the Forest Service and/or their concessionaire, Rocky Mountain Recreation.
    - Document the number of times capacity was met or exceeded based on utilization of available parking spaces.
    - If sufficient data is not available to characterize recreation use using existing information, SCE will conduct on-ground vehicle counts and opportunistic in-person surveys at the day-use facilities and along SR 178 in 2024, in consultation with the SQF.
- Conduct vehicle counts and opportunistic in-person surveys at each day-use facility (inclusive of associated overflow parking), and at locations along SR 178 that support informal river access. Consult with the Recreation Technical Working Group (TWG) to identify locations along SR 178 used to access the river. During the vehicle counts, the following information will be collected: date, time, weather conditions, and number of vehicles parked at each facility.

- The vehicle counts will be conducted as follows:
  - A survey technician will count the number of vehicles observed four days per month (two randomly selected weekdays and two randomly selected weekend) from April – September 2024 week (total of 24 days).
  - The 4 randomly selected days per month will not include days when it is raining or when substantive precipitation is forecast, or on days when any access restriction is in place.
  - In addition, the survey technician will count the number vehicles 1 randomly selected day on each of the following holiday weekends (3 days total):
    - Memorial Day
    - Fourth of July
    - Labor Day
  - On each day a vehicle count is conducted, the vehicle count will be completed during two of three randomly selected shifts:
    - Shift 1 (7 a.m. to 11 a.m.)
    - Shift 2 (11 a.m. to 3 p.m.)
    - Shift 3 (3 p.m. to 7 p.m.)
  - During each shift the vehicle count will be conducted twice, once while travelling west to east (upstream) on SR-178, and once travelling east to west (downstream) on SR-178. Two shifts per day and two counts per shift will result in four vehicle counts on each of the survey days.
  - Estimate the intensity of recreation use based on vehicle count data. Recreation user day estimates will be based on vehicle counts using an average party size of 2.4 people per vehicle, per the Sequoia National Forest's 2016 National Visitor Use Monitoring (NVUM) data report (Forest Service 2018).

- Opportunistic in-person intercept surveys will be conducted by the survey technician(s) completing the vehicle counts. Survey technicians will be bilingual – able to speak in both Spanish and English. Surveys will be conducted with reference to a survey intercept form (in Spanish and English). Data collected will be used to help document recreation use levels along the bypass reach and to develop information about user experience – including aesthetic experience. Survey technicians will be instructed to opportunistically intercept recreation users in parking lots or other safe-to-access locations during the vehicle counts. The intercept forms will be designed with questions for two user groups: day users and

whitewater boaters.[2] SCE will consult with the Recreation TWG to finalize the questions in the intercept survey forms.

CHARACTERIZE RECREATION USE AT SELECT PROJECT TRAILS

- To obtain estimates of overall trail use; characterize type of user (e.g. mountain biking, horseback riding, hiking, other), and other information pertaining to parking, safety, and access: interview SQF recreation planners and SCE personnel and consultants that frequent the Project area. In addition, consult with other interested stakeholders identified by the Recreation TWG such as active Kern Gateway Trail members.

- Collect trail use data using physical tamper-proof survey boxes installed at an obvious location along each of the Project trails.

    - Short self-survey forms within the survey boxes will be designed to collect information about the frequency, intensity, seasonality, and type of use that Project trails receive. SCE will consult with the Recreation TWG to finalize the questions in the survey form.

    - Survey forms will be provided in both Spanish and English. Likewise, signage directing users to complete the survey will be in both Spanish and English.

    - Data will be collected for a 12-month period beginning on or around April 1, 2024 and ending 365 days later (in the spring of 2025).

    - The survey forms will be collected by SCE staff and/or consultants routinely throughout the survey period and the self-survey boxes serviced as needed to ensure functionality.

ESTIMATE FUTURE RECREATION USE AND DEMAND

- Utilize census data and information available in current relevant federal, state, and local comprehensive plans (including the Statewide Comprehensive Outdoor Recreation Plan [SCORP] and supporting survey information) to identify population projections and to document outdoor recreation use trends and needs.

- Utilize the recreation use data collected in this study along with trends and population projections to estimate future recreation needs over the license period (assumed to be 50 years).

- Determine whether future public recreation needs can be met in the vicinity of the Project.

[2] The survey form for users identifying as whitewater boaters will be designed to reflect collection of information aligned with the Whitewater Boating TSP Study objectives.

DOCUMENT PUBLIC SAFETY

- Identify and describe existing programs and measures implemented by SCE to protect public health and safety (i.e., buoy lines, fencing, signage, and alarms). The inventory will include a description of the condition of the existing safety features.

- Characterize the number, type, and location of safety incidents related to recreation that have occurred in the vicinity of the Project over the past ten years. This effort will be conducted by reviewing existing records and databases maintained by the FERC and the Forest Service and by consulting with SCE staff.

REPORTING

- Study methods and results will be documented in a REC 2 – Facility Use Assessment Technical Study Memo (TSM). The TSR will include summary tables and figures, as appropriate, to ensure results can be easily understood. Detailed maps and graphics will be used to convey spatial relationships when necessary. Stakeholder review and comment period for the TSM is identified below in the Schedule.

- All data collected during the study will be entered into a data base (excel or similar) by the technical staff, under the supervision of the task lead.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
Jan 2024 – April 2024	Consult with the Recreation TWG to (1) identify locations along the bypass reach accessible from SR 178 used for dispersed recreation, and (2) to finalize questions in the intercept survey forms.
April 2024–June 2024	Acquire and review key information sources to characterize recreation use in the Project vicinity (i.e., Forest Service recreation planners, concessionaire, stakeholders identified by the Recreation TWG, and existing data files and reports).
April 2024 – April 2025	Install temporary tamper-proof survey boxes at obvious location along each of the trails of focus.
April 2024–September 2024	Conduct vehicle counts and opportunistic in-person intercept surveys.
October 2024–January 2025	Analyze data and prepare draft technical memo.
February 2025	Distribute draft technical memo to stakeholders

Date	Activity
February 2025–May 2025	Stakeholders review and provide comments on draft technical memo (90 days).
May 2025–July 2025	Incorporate results from the self-survey boxes into revised draft technical memo
August 2025	Distribute revised draft technical memo to stakeholders
August 2025-September 2025	Stakeholders review and provide comments on revised draft technical memo (60 days).
October 2025-November 2025	Resolve comments and prepare final technical memo
December 2025	Distribute Final Memo in Draft License Application

REFERENCES

California State Parks (California Department of Parks and Recreation). 2021. California's 2021-2025 Statewide Comprehensive Outdoor Recreation Plan, A Five-Year Plan for Increasing Park Access, Community-Based Planning, and Health Partnerships Through Grants. Accessed February 2023. Available online: Parks for All Californians: SCORP 2020 Report (parksforcalifornia.org).

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_____. 2018. Visitor Use Report, Sequoia National Forest, Forest Service, Region 5, National Visitor Use Monitoring Data collected FY 2016. United States Department of Agriculture.

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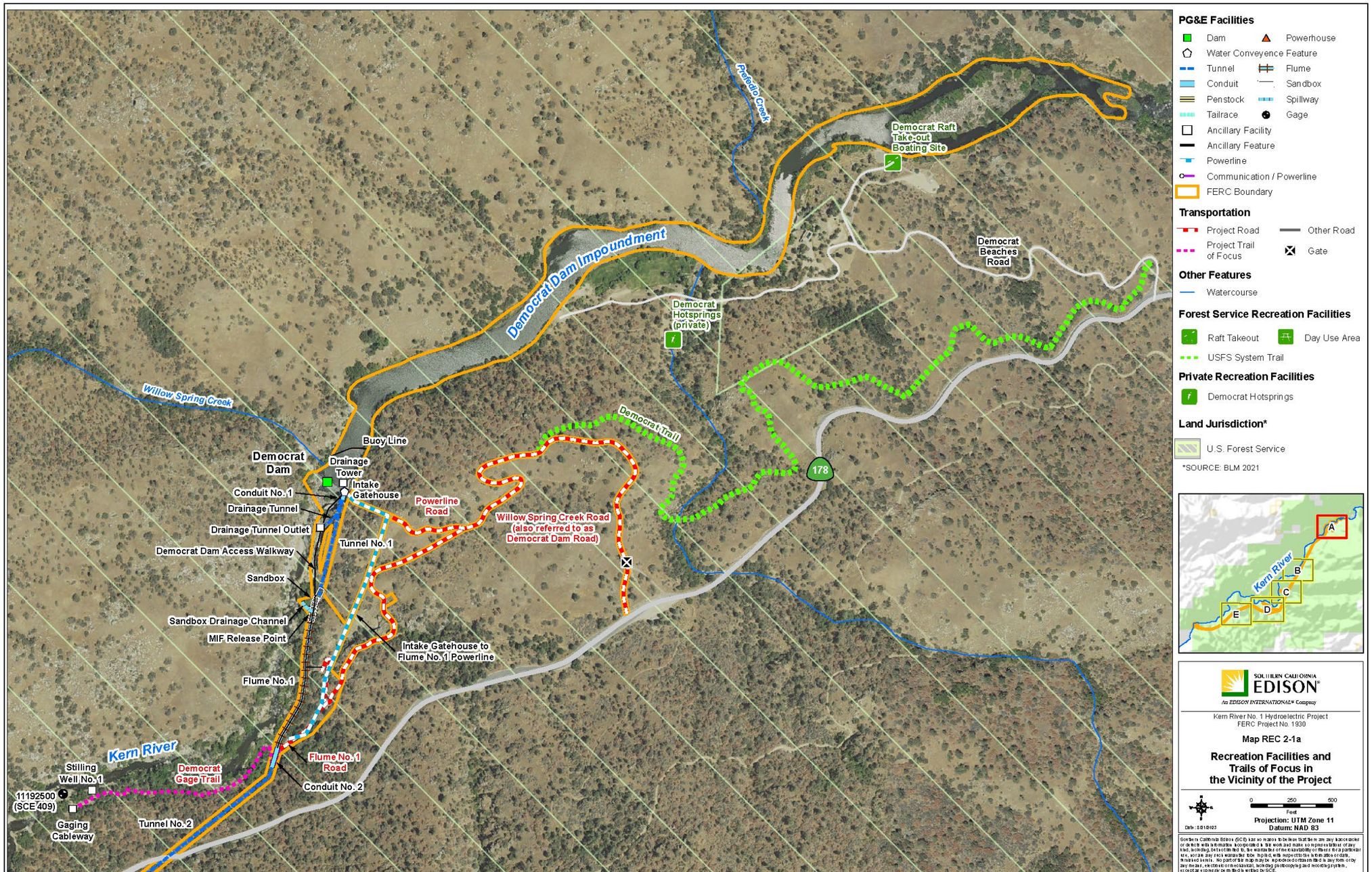
TCW (TCW Economics). 2005. Report on Five Year Recreation Use Monitoring Study for the Kern River No. 1 Hydroelectric Project (FERC No. 1930). Prepared for Southern California Edison, Hydro Generation Division, 300 North Lone Hill, San Dimas, CA 91773. Prepared by TCW Economics, 27569th Ave. Sacramento, CA.

MAPS



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Map REC 2-1a. Recreation Facilities and Trails of Focus in the Vicinity of the Project

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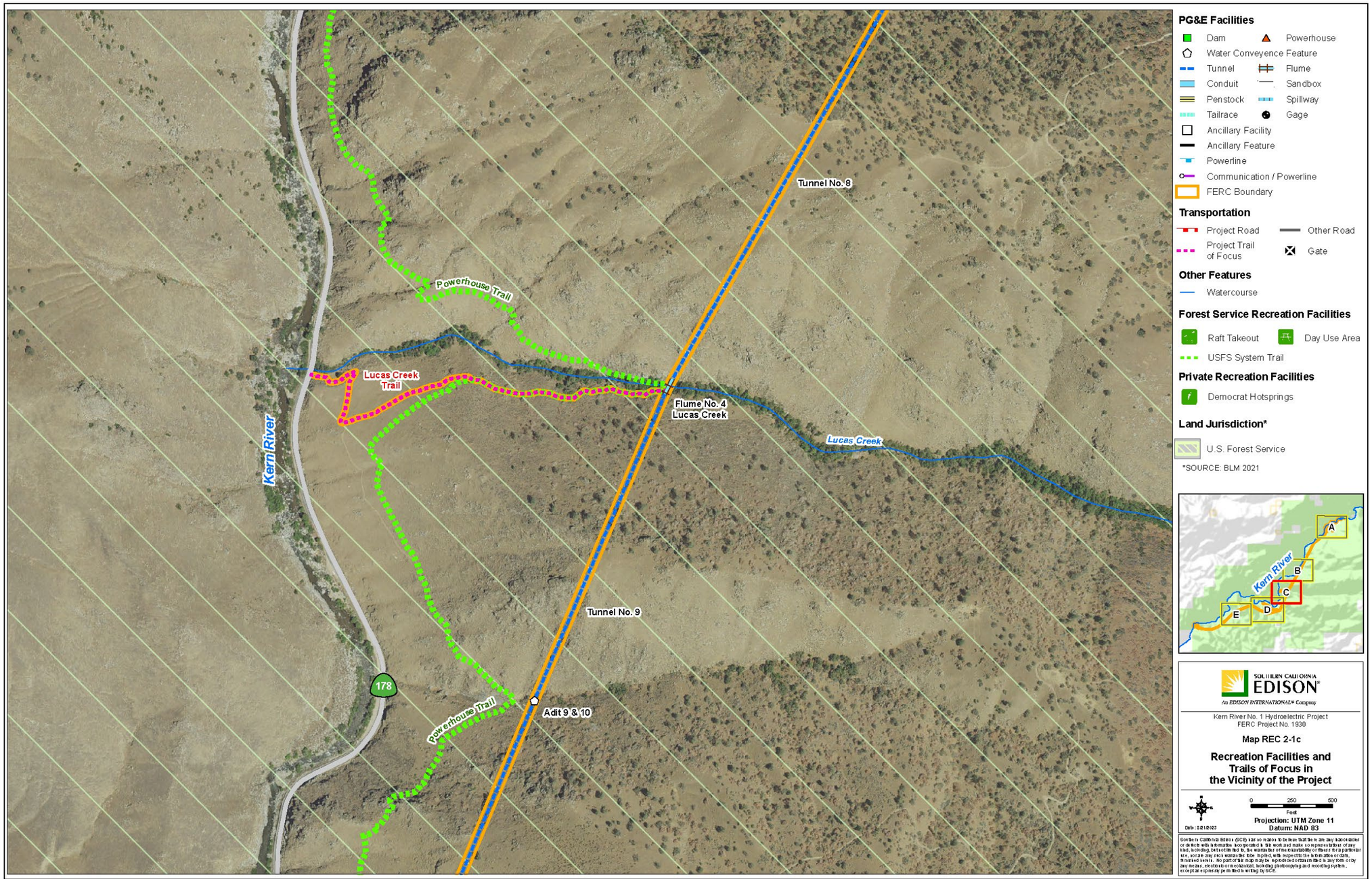
Map REC 2-1b. Recreation Facilities and Trails of Focus in the Vicinity of the Project



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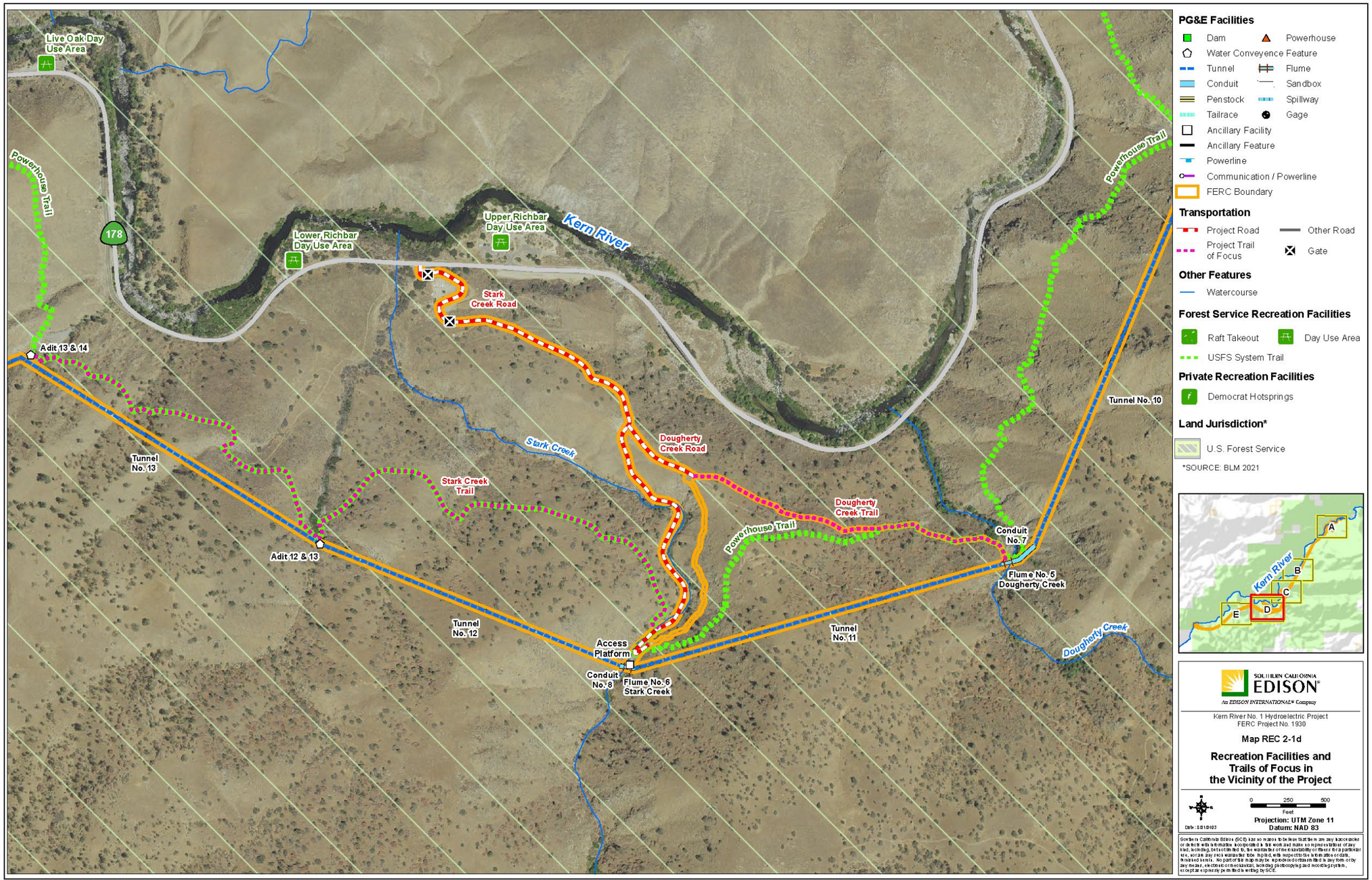
Map REC 2-1c. Recreation Facilities and Trails of Focus in the Vicinity of the Project



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Map REC 2-1d. Recreation Facilities and Trails of Focus in the Vicinity of the Project

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Map REC 2-1e. Recreation Facilities and Trails of Focus in the Vicinity of the Project

REC 3 – WHITEWATER BOATING TECHNICAL STUDY PLAN

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

October 2023

TECHNICAL STUDY PLAN
REC 3 – Whitewater Boating

POTENTIAL RESOURCE ISSUE

- Whitewater boating opportunities.

PROJECT NEXUS

- Project operations modify the flow regime in the Kern River No. 1 bypass reach,[1] potentially affecting whitewater boating opportunities (timing and/or duration).

RELEVANT INFORMATION

The following information is available regarding recreation in the vicinity of the Project. See Section 3.11, Recreation Resources Pre-Application Document (PAD) for a summary of relevant information:

- Sequoia National Forest Land Management Plan (Forest Service 2023).
- Application for New License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930 (SCE 1994).
- Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014 (FERC 1998a).
- FERC Order Issuing New License (Major Project), FERC Project No. 1930-014 (FERC 1998b).
- Five-Year Recreation Use Report, Kern River No. 1 Hydroelectric Project – FERC No. 1930 (TCW 2005).
- The Best Whitewater in California (Holbeck, L. and Stanley, C. 1998).
- California Whitewater, A Guide to the Rivers (Cassady J. and Calhoun F. 1995).
- Various state and federal agency websites.
- Various whitewater boating websites.

POTENTIAL INFORMATION GAPS

- Whitewater boating trends and future demand.
- Whitewater boating use associated with Democrat Raft Take-out Boating Site.

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

STUDY OBJECTIVES

- Characterize the whitewater boating run in the Kern River No. 1 bypass reach including the length, whitewater difficulty, name of key rapids, and typical access locations for put-in and take-out.
- Identify and characterize access to whitewater boating along the bypass reach.
- Identify the range of flows (minimum acceptable and optimum) that would provide whitewater boating opportunities in bypass reach for a variety of watercraft including, kayaks, rafts, packrafts, stand-up paddleboards, and body boards.
- Quantify the annual and monthly frequency that minimum acceptable and optimum whitewater flows occur in the bypass reach under current Project operations and without Project diversion for each watercraft type.
- Describe existing mechanisms for dissemination of flow information to the public.
- Document potential conflicts of whitewater boating flows with other recreation users.

EXTENT OF STUDY AREA

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

STUDY APPROACH

The study approach generally follows the methods identified in *Flows and Recreation: A Guide to Studies for River Professionals* (Whittaker et al., 2005). The 2005 publication outlines a sequential framework to investigate flow dependent whitewater boating opportunities using various investigative tools across three progressive levels of study. Progression through the framework affords a better understanding of the whitewater boating opportunities and associated flow in the bypass reach. The three levels of study increase data resolution as investigations progress from one level to the next and share interim results earlier in the relicensing process across resource disciplines.

LEVEL 1: DESKTOP REVIEW

The Level 1 Desktop Review will include the following elements:

- Literature review to augment information in PAD Section 11, Recreation Resources.
  - Literature review will include reviewing existing studies/publications, whitewater guidebooks, magazine publications, and online river information sites.
  - A table summarizing whitewater opportunities in the Kern River Basin (including the study bypass reach) will be compiled including the name of the whitewater

run, river name, put-in and take-out location, length, gradient (feet per mile), and whitewater difficulty for comparative purposes.

- Characterization of whitewater boating use in the study bypass reach, as available, using records from the Sequoia National Forest (SQF) and other sources.

- Hydrology Assessment
  - Utilizing existing gage data compiled as part of AQ-1 Hydrology Technical Study Plan, summarize hydrology in the bypass reach.
    - The hydrology summary will include frequency, timing, duration, and magnitude of flows. Data will be reported using mean, median, interquartile, range, and exceedance metrics.

- Project Facility Capabilities Description
  - Description of operational capabilities of Democrat Dam facilities, including the Project Intakes. Capabilities will be articulated with reference to prospective future project releases, conveyance dewatering, and ramp time.

- Structured interviews:
  - Conduct structured interviews with individuals nominated from the whitewater boating community representative of a range of watercraft, skill levels, and knowledge of the whitewater boating run in the bypass reach.
  - The interviews will focus on individual knowledge of the whitewater boating run between Democrat Dam and the Kern River No. 1 Powerhouse Tailrace to estimate range of preferred flows (minimum acceptable and optimum whitewater flows) for the bypass reach for respective watercraft; identify constraints, if any, for estimating range of preferred flows; flow information needs; and whitewater use patterns.

Information obtained in the Level 1 investigation will be used to determine, in consultation with the resource agencies and whitewater boating community, whether Level 2 Limited Reconnaissance is necessary to achieve the study objectives.

LEVEL 2: LIMITED RECONNAISSANCE

The Level 2 investigation, if conducted, will include a limited reconnaissance site visit with study participants consisting of agency staff and boaters. The elements of the Level 2 Limited Reconnaissance are described below.

- Conduct a site visit for direct observation of the whitewater boating run with a group of study participants consisting of agency staff and boaters.

- The boating community will nominate study participants for the Level 2 Limited Reconnaissance Site Visit. Study participant composition should be representative of a range of watercraft, skill levels and knowledge of the whitewater boating segments in study bypass reach. For logistical and safety reasons, the Level 2 Limited Reconnaissance will be limited to 12 individuals.

- Information collected during the Level 2 Limited Reconnaissance may include:
  - Review of information collected in Level 1 to confirm accuracy and revise based on input from Level 2 study participants and field observations.
  - Estimates of flow preferences (minimum acceptable and optimum whitewater flows) for respective watercraft types and potential knowledge gaps in flow preferences based on input from study participants.
  - Factors influencing flow preferences based on input from study participants.
  - Recreation use patterns in the bypass reach river for different watercrafts and timing of use (weekday, weekend, time of day);
  - Visits to formal and informal access locations; and
  - Flow information dissemination – currently available and additional needs

The Level 2 Limited Reconnaissance Site Visit coupled with input from the study participants will increase the precision of estimated boating flow ranges for the various watercraft types and knowledge of recreation use patterns. Information obtained in the Level 1 and Level 2 investigations will be used to determine, in consultation with the resource agencies and whitewater boasting community, whether a Level 3 On-water Boating Assessment is necessary to achieve the study objectives.

LEVEL 3: ON-WATER WHITEWATER BOATING ASSESSMENT

A Level 3 On-water Boating Assessment will only be conducted if results from the Level 1 Desktop Review and Level 2 Limited Reconnaissance are insufficient to characterize flow preferences over a variety of watercraft types. If necessary, the Level 3 On-water Boating Assessment will collect flow preference information directly from whitewater boaters for a variety of watercraft for the bypass reach using a single flow study for individual trips or, potentially, a controlled flow study. Consultation with the resource agencies and whitewater boating community will determine the need for, and potential to, conduct a single flow study or controlled flow study. The purpose of the studies is to improve the accuracy of identifying flow preferences for a variety of watercraft types.

Whitewater Focus Gup

The Level 3 On-water Boating Assessment Intensive Study will include a focus group designed to gather additional information from boaters with direct experience on the bypass reach. Focus group questions will prompt discussion on suitable range of flows for a variety of watercraft; navigability and whitewater difficulty across a range of flows;

daily, weekly, and seasonal use patterns; flow information needs; river access; safety; other areas of concern; and uniqueness of the whitewater river segments compared to other opportunities in the region.

Focus group participants will be identified in advance and nominated collaboratively with the whitewater community. Participant selection will be based in part on knowledge of whitewater boating opportunities in the Kern River Basin and direct experience on the bypass reach. The focus group will include representation across watercraft types.

Single Flow Study

The single flow study would be similar to other studies conducted by American Whitewater (AW) to collect flow preference information and recreation use patterns on rivers (AW, 2017 and 2021).

In the single flow study, whitewater boaters can provide input immediately after completing individual boating trips using the single flow survey. If the boater completes multiple trips over the study season or has past experiences over a wide range of water year types, the boater can fill out the flow comparison survey.

The surveys will be available at identified take-out locations along the bypass reach and also be available online. SCE will identify the flow for each individual boating trip based on the data provided.

SCE will make a good-faith effort to inform the boating community in advance when hydrologic conditions are within the boatable flow ranges identified in the Level 1 and/or Level 2 assessments. If flows are anticipated to be within the boatable flow ranges, SCE will reach out to Kern River Boaters, American Whitewater, Los Angeles Kayak Club, and Dreamflows. This is not a guarantee of a particular flow, just an indication that there may be the possibility for boating in the bypass reach. SCE will attempt (good faith effort) to give boaters advance notice to plan trips to the river using information on flow releases from Lake Isabella and forecasting technology available to SCE at the time of study. Ideally, boaters will be notified 2 to 3 days in advance to plan a trip.

The single flow study will include the following elements:

- A whitewater single flow survey form and a whitewater comparison flow survey form will be available within a temporary tamper-proof self-survey box at boater take-out locations along the bypass reach, and also available online.
    - Information collected in Levels 1 and 2 will be used to develop the single flow survey form and to develop the whitewater comparison flow survey form.
        - The single flow survey form will allow respondents to evaluate individual flows shortly after experiencing them. Respondents will be asked name, zip code, date, time, watercraft type, and to rate the acceptability of the flow using scale in Whittaker et al. (2005). Respondents will also be asked questions about their user experience – including aesthetic experience..

- The whitewater flow comparison survey from will be designed to obtain information on flow preferences on the bypass reach by individuals that have run the reach multiple times. Survey questions will ask respondents to rate the acceptability of a range of flows for each watercraft type, timing of use, preferred whitewater segments, river access locations, flow information needs, and comparison with other whitewater opportunities in the Kern River Basin. Respondents will also be asked questions about aesthetic experience. The range of flows presented in comparative flow questions will be based on information gathered in Levels 1 and 2. Signage at the self-survey box location will describe the purpose of the survey and provide direction for completing the survey using the self-survey forms or online via the provided QR code.

- The QR code to complete the single flow survey will also be distributed to local retailers in Kernville as well as local, regional, and national whitewater boating groups, and will be accessible on the Kern River No. 1 Hydroelectric Project relicensing website

- The take-out locations where the self-survey boxes will be located will be determined in consultation with the resource agencies and whitewater boating community.

- The self-survey boxes shall be placed in May 2025 and removed in late September 2025 (consistent with expectations associated with the most popular months for boating). If information gathered as part of the Level 1 Desktop Review indicates the need to adjust the survey period, the schedule for placement of the survey boxes may be adjusted.

Controlled Flow Study

As described in the Pre-application Document, inflow into the Kern No. 1 Project is controlled by operations of Lake Isabella Dam by the Army Corps of Engineers and requests for schedule flow releases from the Kern River Water Master. During a normal water year, inflow to the Project ranges from 800 to 3000 cfs. The Project has diversion rights of 412 cubic feet per second (cfs) from the Kern River at Democrat Dam. Therefore, the controlled flow study, if possible, would involve modifying diversion rates at Democrat Dam within the limitation of SCE's diversion rights.

In a controlled flow study, a boating study team will be established consisting of volunteers with the requisite technical abilities and experience to boat the bypass reach within boatable flow ranges and with variation at up to three controlled flows. The boating study team will be developed in consultation with the whitewater boating community.

Study implementation details, including the number of boaters, safety, support, and communication, will be developed in collaboration with the Recreation TWG and the boating study team. The study will include the following general parameters.

- SCE will attempt (good faith effort) to schedule the controlled flow study based on flow releases from Lake Isabella Dam and schedule flow requests from the Water Master. Ideally, the boating study team will be notified 2 to 3 days in advance.

- The boating study team will meet at pre-determined locations and times for each flow.

- Each participant will be asked to complete a Boater Profile Form and given the opportunity to review the Single Flow Survey Form and to ask questions prior to the run.

- Following the boating run, each member of the boating study team will complete the Single Flow Survey Form.

- A debrief meeting at the end of each run will be conducted with the boating study team to share observations and experiences as pertaining to suitability of the flow.

PUBLIC SAFETY AND USE CONFLICTS

Public safety concerns associated with whitewater boating in the bypass reach will be documented using available information such as the Kernville Chamber of Commerce, SQF, California Department of Boating and Waterways, AW accident database, Federal Energy Regulatory Commission (FERC) incident reports, focused interviews (Level 1) and whitewater boating focused group discussions (Level 3).

Potential recreation-use conflicts associated with whitewater boating flows will be identified where possible.

REPORTING

- Study methods and results will be documented in a REC 3 – Whitewater Boating Technical Study Memo (TSM). The TSM will include summary tables and figures, as appropriate, to ensure results can be easily understood. Stakeholder review and comment period for the TSM is identified below in the Schedule.

- All data collected during the study (existing records and data from surveys) will be entered into a data base (excel or similar) by the technical staff, under the supervision of the task lead.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

This is a one-year study to be conducted during the first year of the study period with the study results reported in the Initial Study Report (ISR).

Date	Activity
April 2024–August 2024	Conduct Level 1 Desktop Study
August 2024–September 2024	Complete Level 2 Limited Reconnaissance
October 2024–January 2025	Analyze data and prepare draft technical memo (Level 1 and Level 2)
February 2025	Distribute draft technical memo to stakeholders
February 2025–April 2025	Stakeholders review and provide comments on draft technical memo (90 days)
April 2025	Determine, in consultation with resource agencies and whitewater community, whether a Level 3 On-water Boating Assessment is needed
May 2025–June 2025	Resolve comments and prepare draft final technical memo (Level 1 and Level 2)
May 2025–September 2025	If necessary, conduct Level 3 On-water Boating Assessment (Whitewater Focus Group and single flow or controlled flow study)
May 2025-September 2025	Place temporary tamper-proof self-survey boxes at whitewater boater put-in and take-out locations along the bypass reach for single flow study.
October 2025–November 2025	Incorporate results from the Level 3 Assessment into final technical memo
December 2025	Distribute final technical memo in the Draft License Application for stakeholder review

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TERR 1 – BOTANICAL RESOURCES TECHNICAL STUDY PLAN

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

October 2023

TERR 1 – Botanical Resources Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Protection of vegetation alliances.
- Protection of special-status plant populations.
- Reduce the introduction or spread of non-native invasive plants (NNIPs).

PROJECT NEXUS

- Project maintenance could result in direct loss or degradation of vegetation alliances, including communities afforded special recognition by state and federal agencies (e.g., riparian areas and special aquatic features [e.g., lakes, wet meadows, bogs, fens, wetlands, vernal pools, seeps, and springs]).
- Project maintenance activities could result in removal or disturbance of special-status plant populations.
- Project maintenance activities could result in the introduction or spread of NNIPs.

RELEVANT INFORMATION

The following information is available regarding botanical resources in the vicinity of the Project. See Section 3.6, Botanical and Wildlife Resources Pre-Application Document (PAD) for a summary of relevant information:

VEGETATION ALLIANCES AND WILDLIFE HABITATS

- Classification and Assessment with land satellite (LANDSAT) imagery of Visible Ecological Groupings (CALVEG) United States Forest Service (Forest Service) Region 5, Southern Sierran Ecological Province (Forest Service 2014).
- Supplemental information (e.g., habitat descriptions) obtained from review of the following Project-specific sources:
  - The Final Environmental Assessment for Kern River No. 1 Hydroelectric Project – Federal Energy Regulatory Commission (FERC) No. 1930-014, California (Environmental Assessment) (FERC and Forest Service 1998).
  - The Application for New License, Kern River No. 1 Hydroelectric Project – FERC Project No. 1930, Kern County, California (License Application) (SCE 1994).

SPECIAL-STATUS PLANTS

- Sequoia National Forest (SQF) Species of Conservation Concern (FSCC) List (Forest Service 2023) and associated Natural Resources Information System (NRIS) (Forest Service 2022).

- California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants (CNPS 2022).
- The California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2022).
- The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website (USFWS 2022).
- Supplemental information (e.g., special-status species occurrences) obtained from review of the following Project-specific sources:
  - The Environmental Assessment (FERC and Forest Service 1998).
  - The License Application (SCE 1994).

NON-NATIVE INVASIVE PLANTS

- The California Invasive Plant Council's (Cal-IPC's) California Invasive Plant Inventory (Cal-IPC 2022)

POTENTIAL INFORMATION GAPS

- Updated information on vegetation alliances, including riparian alliances.
- Information on the relationship between flow conditions and riparian alliances in the bypass reach.
- Updated information on special-status plant populations.
- Updated information on NNIPs.

STUDY OBJECTIVES

- Document vegetation alliances adjacent to Project facilities.
- Document riparian vegetation alliances and wetlands adjacent to Project facilities and the bypass reach.
- Determine the relationship between riparian vegetation alliances and flow conditions in the bypass reach.
- Document special-status plant populations at Project facilities.
- Document NNIPs at Project facilities.

EXTENT OF STUDY AREA

VEGETATION ALLIANCES AND WILDLIFE HABITATS

- For vegetation alliances, the study area is 1 mile around Project facilities (see Table TERR 1-1).

- For riparian vegetation alliances and special aquatic features, the study area is the FERC Project boundary (excluding underground Project features); 10 feet on either side of Project access trails located outside the FERC Project boundary; and the bypass reach.

SPECIAL-STATUS PLANTS AND NON-NATIVE INVASIVE PLANTS

- For the purposes of the special-status plants and NNIP studies, the study area is the FERC Project boundary (excluding underground Project features) and 10 feet on either side of Project access trails located outside the FERC Project boundary.

PRIVATE PROPERTY

- For surveys at or around Project facilities that are located outside of the FERC Project Boundary and on private property, SCE will take the following steps to obtain approval prior to implementation of studies:

    - Provide notification to landowner of Project relicensing and request authorization to enter property to conduct surveys.

    - If authorization is obtained, SCE will complete surveys as described in this TSP.

    - If authorization is not obtained, SCE will not complete surveys at these locations.

STUDY APPROACH

VEGETATION ALLIANCES

- Develop vegetation alliance maps of the study area based on CALVEG mapping and vegetation alliance descriptions.[1]

    - Preliminary vegetation alliance information is presented in the following:

        - Section 3.6, Botanical and Wildlife Resources of the PAD provides a draft map of CALVEG vegetation alliances within 1 mile of Project facilities.

[1] The CALVEG system was developed by U.S. Department of Agriculture – Forest Service (Forest Service) to classify existing vegetation present on federally managed forestlands based on LANDSAT color infrared satellite imagery. Data are verified using soil-vegetation maps and professional guidance from various sources statewide. CALVEG data for the Southern Sierra were updated by Forest Service in 2014.

    - Section 3.9, Wetland, Riparian, and Littoral Habitats of the PAD provides a draft map showing riparian and wetland vegetation associated with the floodplains and littoral zones along the bypass reach of the Kern River and the Democrat Dam Impoundment. Also included are wetland and riparian habitats that are associated with the flumes, conduits, and adits along Project tunnels and which may be influenced by flume leakage as identified in Article 405 of the current FERC license order.

- Verify the accuracy of CALVEG data and update vegetation alliances using recent aerial photographs.

- Conduct ground-truthing of vegetation alliances within 0.25-mile of Project facilities, concentrating in areas where questions about vegetation community identification or boundaries arise from review of aerial photographs. Inaccessible areas will not be ground-truthed.

- Develop a Geographic Information System (GIS) map of vegetation alliances in the study area and overlay information on Project facilities.

- Develop a GIS map of riparian vegetation alliances and special aquatic features in the study area and overlay information on Project facilities.

- Map the extent of riparian vegetation alliances along the bypass reach using a combination of high-resolution aerial imagery and field observations.

    - Riparian communities will be classified based on A Manual of California Vegetation (Sawyer et al. 2009).

- Develop a GIS map of riparian vegetation alliances along the bypass reach.

- Characterize the relationship between the riparian vegetation and flow conditions in the bypass reach:

    - Establish up to 10 cross-sections at representative locations along the bypass reach.

        - Characterize riparian vegetation and substrate along the length of each cross-section.

            - Obtain the following data at the cross-sections.

                > GPS coordinates of the headpins.

                > Photograph (across, upstream, and downstream).

                > Woody riparian vegetation (percent cover and age class for dominant woody riparian trees/shrubs, by species).

- Herbaceous riparian/wetland (percent cover of riparian/wetland herbaceous and graminoid plants, by species).
- Substrate composition (size class / percentage of substrate types).

- Develop stage-discharge relationships over a range of flows (high to low).

- Develop a summary of the relationship between existing inundation characteristics (e.g., timing, frequency, depth, and width of inundation) and the distribution of dominant riparian species within the bypass reach.

- Compare and contrast existing Project and without Project hydrology in relation to riparian vegetation recruitment and maintenance in the bypass reach.

SPECIAL-STATUS PLANTS

For the purposes of this study, a special-status plant is defined as any plant species that is granted protection by a federal or state agency. Federally listed plant species granted status by the USFWS under the Federal Endangered Species Act (ESA) include threatened (FT), endangered (FE), proposed threatened or endangered (FPT, FPE), candidate (FC), or listed species proposed for delisting (FPD). Special-status plants designated by the SQF as FSCC are also included.

State of California listed plant species, which are granted status by the CDFW under the California Endangered Species Act (CESA) include ST, SE, SR, and California Species of Special Concern (CSC).

Under the California Environmental Quality Act (CEQA), special-status plants are also defined to include those species identified in the CNPS 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).

The study approach for special-status plants is provided below.

- Identify and map known occurrences of special-status plants within the study area, based on agency consultation and a review of existing information. Preliminary information is presented in Section 3.6, Botanical and Wildlife Resources of the PAD.

- Develop a list of special-status plant species potentially occurring in the Project vicinity based on literature review and agency consultation. A preliminary list is provided in Section 3.6, Botanical and Wildlife Resources, Table 3.6-2 of the PAD.

- Conduct focused special-status plant surveys, according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

    - Field surveys will be conducted at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Generally, this is when the plants are flowering. Based on the blooming periods for plants known or potentially occurring within the Project vicinity, two surveys will be conducted, one in late April and one in late July (Table TERR 1-2).

    - The timing of surveys will be verified based on reference population monitoring. Agencies will be notified of population monitoring results and proposed survey dates prior to implementation of special-status plant surveys.

    - Systematic field techniques will be implemented (e.g., zigzag patterns, random meandering, and linear transects) in the study area.

    - If a special-status plant species population is identified on the perimeter of the study area, the study area will be expanded to document the full extent of the population.

    - Surveys will be floristic in nature and taxonomy will be based on The Jepson Manual (Baldwin et al. 2012). A comprehensive list of species observed during field surveys will be compiled.

    - Digital photographs, Global Positioning System (GPS) information, an estimate of the number of individuals present, and a description of associated vegetation alliance will be collected for each special-status plant population observed.

- Develop a GIS map of special-status plant populations and overlay information on Project facilities.

- Prepare and submit California Native Species Field Survey Forms for all special-status plant populations recorded to California Natural Diversity Database (CNDDB).

NON-NATIVE INVASIVE PLANTS

The Cal-IPC defines NNIPs as plants that 1) are not native to, yet can spread into, wildland ecosystems, and that also 2) displace native species, hybridize with native species, alter biological communities, or alter ecosystem processes (Cal-IPC 2022).

The study approach for NNIPs is provided below.

- Identify and map known occurrences of NNIPs based on agency consultation and a review of existing information. Preliminary information is presented in Section 3.6, Botanical and Wildlife Resources of the PAD.

- Develop a list of priority NNIPs for focused NNIP surveys. This list will incorporate priority NNIPs identified through consultation with agencies.

- Conduct focused NNIP surveys in conjunction with special-status plant surveys.

- Collect data and report survey results as follows:

  - Data collected will include species, location, and number of acres infested by NNIPs.

  - If a NNIP population is identified on the perimeter of the study area, the study area will be expanded to document the extent of the population.

  - Levels of infestation will be reported as: low (<5% cover); moderate (6–25% cover), and high (>25% cover). Areas that have been surveyed and found to be weed-free will also be identified.

- Develop a GIS map of noxious weeds and invasive non-native plants and overlay information on Project facilities.

REPORTING

- Study methods and results will be documented in a TERR 1 – Botanical Resources Technical Study Memo (TSM). The TSM will include summary tables and maps, as appropriate.

- GIS data and tabular data will be provided to Forest Service with the draft TSM. This data will also be provided to other resource agencies and interested stakeholders upon request.

SCHEDULE

Date	Activity
April –August 2024	Initiate desktop review and field surveys[2]
September–December 2024	Analyze data and prepare draft technical memo
January 2025	Distribute draft technical memo to stakeholders
February 2025–April 2025	Stakeholders review and provide comments on draft technical memo (90 days)
May–June 2025	Resolve comments and prepare final technical memo
December 31, 2025	Distribute final technical memo in Draft License Application

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FERC (Federal Energy Regulatory Commission) and Forest Service (U.S. Forest Service), Sequoia National Forest. 1998. Final Environmental Assessment, Kern River No. 1 Hydroelectric Project, FERC No. 1930-014, California.

[2] Initiation of desktop review and field studies in April 2024 prior to formal study plan determination assuming all agency and stakeholder comments have been resolved.

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TABLES

Table TERR 1-1. Kern River No. 1 Hydroelectric Project – Project Facilities

Diversion Dam
Democrat Dam
Impoundment
Democrat Dam Impoundment
Water Conveyance System
Sandbox
Tunnels, Flumes, Conduits, and Adits
Forebay
Forebay Overflow Spillway
Penstock
Powerhouse and Switchyard
Kern River No. 1 Powerhouse and Switchyard
Access Roads
Willow Spring Creek Road (also referred to as Democrat Dam Road)
Powerline Road
Flume No. 1 Road
Dougherty Creek Road
Stark Creek Road
Forebay Operations Area Road
Lower Powerhouse Road
Upper Powerhouse Road
Access Trails
Democrat Gage Trail
Conduit No. 3 Trail
Cow Flat Creek Trail
Steel Flume Trail
Lucas Creek Trail
Dougherty Creek Trail
Stark Creek Trail
Adit 17 & 18 Trail
Overflow Spillway Trail
Skip Hoist / Forebay Trail
Communication and Power Lines
Intake Gatehouse to Flume No. 1 Powerline
Powerhouse to Forebay Communication / Powerline

Gages and Stilling Wells
Kern River near Democrat Springs (USGS Gage No. 11192500 / SCE Gage No. 409)
Kern River No. 1 Conduit near Democrat Springs (USGS Gage No. 11192000 / SCE Gage No. 410)
Kern River near Democrat Springs (USGS Gage No. 11192501; calculated 11192500+11192000)
Stilling Well No. 1
Stilling Well No. 2
Ancillary and Support Facilities
Democrat Dam Area
Buoy Line in Democrat Dam Impoundment
Democrat Dam Intake Gatehouse
Democrat Dam Drainage Tower
Democrat Dam Drainage Tunnel
Democrat Dam Drainage Tunnel Outlet
Democrat Dam Access Walkway
Sandbox Drainage Channel
Gaging Cableway
Water Conveyance
Flume No. 6 Access Platform
Forebay Operations Area
Old Admin Building
Garage No. 1
Garage No. 2
Old Ice House
Water Tank
Aerial Cable Tower
Skip Hoist House and Lower Landing
Skip Hoist Cables and Cart
Skip Hoist Upper Landing
Skip Hoist Upper Landing to Forebay Catwalk
Communication Site
Forebay Operations Area Perimeter Fence
Forebay Perimeter Fence
Powerhouse Area
Machine Shop
Office / Lunchroom
Restroom
Powerhouse and Switchyard Perimeter Fence

Table TERR 1-2. Blooming Periods for Special-Status Plants Known or Potentially Occurring in the Kern River No. 1 Hydroelectric Project Vicinity.

Scientific Name	Common Name	Species Code	Federal Status	Forest Service Status	State Status	California Rare Plant Ranking	Bloom Period								
							Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Calochortus striatus	Alkali mariposa lily	CAST2	-	FSCC	-	CRPR 1B.2			■	■	■				
Camissonia integrifolia	Kern River evening-primrose	CAIN22	-	FSCC	-	CRPR 1B.3				■					
Clarkia springvillensis	Springville clarkia	CLSP6	FT	-	CE	CRBR 1B.2			■	■	■	■			
Delphinium purpusii	Rose-flowered larkspur	DEPU	-	FSCC	-	CRPR 1B.3			■	■					
Diplacus pictus (Mimulus pictus)	Calico monkeyflower	MIPI2	-	FSCC	-	CRPR 1B.2		■	■	■					
Eriastrium tracyi	Tracy's eriastrum	ERSPH2	-	FSCC	CR	CRPR 3.2				■	■	■			
Eschscholzia lemmonii ssp. *kernensis*	Tejon poppy	ESLEK	-	FSCC	-	CRPR 1B.1		■	■	■					
Fritillaria brandegeei	Greenhorn fritillary	FRBR	-	FSCC	-	CRPR 1B.3			■	■	■				
Fritillaria striata	Striped adobe-lily	FRST	-	FSCC	CT	CRPR 1B.1	■	■	■						
Hesperocyparis nevadensis	Piute cypress	HENE2	-	FSCC	-	CRPR 1B.2	Identifiable year-round								
Heterotheca shevockii	Shevock's golden aster	HESH4	-	FSCC	-	CRPR 1B.3							■	■	■
Monardella linoides ssp. *anemonoides*	Southern Sierra monardella	MOLIA	-	-	-	CRPR 1B.3					■	■	■		
Navarretia setiloba	Piute Mountains navarretia	NASE2	-	-	-	CRPR 1B.1			■	■	■	■			
Opuntia treleasei (= O. basilaris var. *treleasei)*	Bakersfield cactus	OPTR3	FE	-	CE	CRPR 1B.1			■	■					
Pseudobahia peirsonii	San Joaquin adobe sunburst	PSPE	FE	-	CE	CRPR 1B.1	■	■	■						
Stylocline citreolum	Oil neststraw	STCI10	-	-	-	CRPR 1B.1		■	■						

■ Blooming Period

Federal Status
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate

Forest Service Status
FSCC = Sequoia National Forest Species of Conservation Concern

State Status
CE = State Endangered
CT = State Threatened
CR = State Rare

California Rare Plant Rank
1B = Rare, threatened or endangered in California and elsewhere.
2B = Rare in California but more common elsewhere.
4 = Plants of limited distribution – a watchlist.
_.1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
_.2 = Moderately threatened in California (20-80% occurrences threatened)
_.3 = Not very threatened in California (<20% of occurrences threatened, or no current threats known)

TERR 2 – WILDLIFE RESOURCES TECHNICAL STUDY PLAN

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

October 2023

TERR 2 – Wildlife Resources Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Protection of special-status wildlife species and their habitats.

PROJECT NEXUS

- Project maintenance activities could disturb or result in direct loss of special-status wildlife species or their habitat.

RELEVANT INFORMATION

The following information is available regarding wildlife resources in the vicinity of the Project. See Section 3.6, Botanical and Wildlife Resources Pre-Application Document (PAD) for a summary of relevant information:

- Wildlife habitats and common wildlife species present within 1 mile of the Federal Energy Regulatory Commission (FERC) Project boundary based on a crosswalk from the United States Forest Service's (Forest Service) Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) alliances (Forest Service 2014) to California Department of Fish and Wildlife's (CDFW) California Wildlife Habitat Relationship (CWHR) System wildlife habitats (CDFW 2022a).

- Known occurrences of special-status wildlife in the vicinity of the Project based on the CDFW California Natural Diversity Database (CNDDB) (CDFW 2022b); CDFW list of species considered California Fully Protected under the California Fish and Game Code (CDFW 2022c); Sequoia National Forest (SQF) Species of Conservation Concern List (Forest Service 2019); and Forest Service Natural Resource Information System (NRIS) (Forest Service 2022); and the USFWS Information for Planning and Consultation (IPaC) website (USFWS 2022a).

- Special-status wildlife species potentially occurring within CWHR designations based on *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

- Proposed Critical Habitat present in the Project area for the Kern Canyon slender salamander and relictual slender salamander (USFWS 2022b).

- Location of Project facilities, including power lines.

- Supplemental information (e.g., habitat descriptions and special-status species occurrences) obtained from a review of the following Project-specific sources:

    - The Final Environmental Assessment for Kern River No. 1 Hydroelectric Project – FERC No. 1930-014, California (Environmental Assessment) (FERC and Forest Service 1998).

- The Application for New License, Kern River No. 1 Hydroelectric Project – FERC Project No. 1930, Kern County, California (License Application) (SCE 1994).

POTENTIAL INFORMATION GAPS

- Updated information on wildlife habitats within 1 mile of the FERC Project boundary.
- Updated information on wildlife use within the FERC Project boundary, and Project access trails located outside the FERC Project boundary.
- Data on Project powerline pole configurations to determine if they are consistent with guidelines for avoidance of avian mortalities.
- Data on open-air segments of Project water conveyance system to determine the potential for wildlife entrapment.
- Information on special-status salamander distribution and use of the FERC Project boundary and Project access trails located outside the FERC Project boundary.
- Information on the location of bat roosts in Project facilities.

STUDY OBJECTIVES

- Identify special-status wildlife species potentially occurring in CWHR habitats documented as part of the TERR 1 – Botanical Resources Technical Study Plan (TSP).
- Identify potential habitat for special-status salamanders within the FERC Project boundary (excluding underground Project features) and 10 feet on either side of Project access trails located outside the FERC Project boundary and conduct visual encounter surveys (VES) to document their presence.
- Determine whether Project powerline pole configurations are consistent with guidelines for the avoidance of avian mortalities.
- Determine the potential for open-air segments of Project water conveyance system to entrap wildlife.
- Document use of Project facilities by special-status bats during reproduction and other seasonal use.

EXTENT OF STUDY AREA

SPECIAL-STATUS WILDLIFE SURVEYS

Wildlife Habitats

- For identification of special-status wildlife species potentially occurring in CWHR habitats, the study area is 1 mile around Project facilities (see Table TERR 2-1).

Wildlife Reconnaissance Surveys

- For wildlife reconnaissance surveys, the study area is the FERC Project boundary (excluding underground Project features) and 10 feet on either side of Project access trails located outside the FERC Project boundary.

Evaluation of Project Powerline Pole Configurations

- For the evaluation of consistency with guidelines for the avoidance of avian mortalities, the study area is Project powerlines (see Table TERR 2-1).

Evaluation of Open-Air Segments of Project Water Conveyance System

- For the evaluation of potential wildlife entrapment, the study area is the sandbox and open-air segments of flumes and conduits along the water conveyance system (see Table TERR 2-1).

SPECIAL-STATUS SALAMANDER SURVEYS

- For special-status salamanders (Kern Canyon slender salamander, relictual slender salamander, and yellow-blotched salamander), the habitat assessment study area is the FERC Project boundary (excluding underground Project features) and 10 feet on either side of Project access trails located outside the FERC Project boundary. The VES study area is potential habitat identified during implementation of the habitat assessment. If habitats extend outside the habitat assessment study area, VES will include:
  - Potential habitat up to 100 feet outside the FERC Project boundary.
  - Potential habitat up to 100 feet outside of Project access trails located outside of the FERC Project boundary.

SPECIAL-STATUS BAT ROOST AND SEASONAL USE SURVEYS

- For special-status bat facility assessment, the study area is Project facilities (Table TERR 2-1).
- For special-status bat reproductive and seasonal use surveys, the study area is the Project facilities potentially supporting bats.

PRIVATE PROPERTY

- For surveys at or around Project facilities that are located outside of the FERC Project Boundary and on private property, SCE will take the following steps to obtain approval prior to implementation of studies:

- Provide notification to landowner of Project relicensing and request authorization to enter property to conduct surveys.
- If authorization is obtained, SCE will complete surveys as described in this TSP.
- If authorization is not obtained, SCE will not complete surveys at these locations.

STUDY APPROACH

For the purposes of this study, a special-status wildlife species is defined as any animal species that is granted status by a federal or state agency. Federally listed species granted status by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) include Federal Threatened (FT), Federal Endangered (FE), Federal Proposed Threatened or Endangered (FPT, FPE), candidates for listing (FC), or proposed for delisting (FPD). Also included are those species listed by USFWS as Birds of Conservation Concern (BCC) which include "species, subspecies, and populations of all migratory nongame birds that, without additional conservation action, are likely to become candidates for listing under the ESA of 1973" (USFWS 2021).

Special-status wildlife designated by the SQF as Forest Species of Conservation Concern (FSCC) are also included (Forest Service 2019).

State of California listed wildlife species which are granted status by the CDFW under the California Endangered Species Act (CESA) include threatened (ST), endangered (SE), Fully Protected species (CFP), and California Species of Special Concern (CSC).

The study approach for special-status wildlife surveys; evaluation of Project powerline pole configurations; special-status salamander surveys; and special-status bat surveys is provided below.

SPECIAL-STATUS WILDLIFE SURVEYS

- Update Table 3.6-1 included in Section 3.6, Botanical and Wildlife Resources of the PAD, based on CALVEG vegetation alliances identified as part of the TERR 1 – Botanical Resources TSP and cross referenced with CWHR System wildlife habitats, using the CALVEG–CWHR Crosswalk (Forest Service 2014). This crosswalk was developed by the Forest Service and the CDFW as a way to determine which wildlife habitats are likely to be present based on existing vegetation alliances and forest structural characteristics.
- Develop an updated Geographic Information System (GIS) map of wildlife habitats within the study area and overlay information on Project facilities.
- Identify and map known occurrences of special-status wildlife species within 0.25 mile of Project facilities based on agency consultation and a review of existing information. Preliminary information is presented in Section 3.6, Botanical and Wildlife Resources of the PAD.

- Identify special-status wildlife species potentially occurring within CWHR designations based on A Guide to Wildlife Habitats of California (Mayer and Laudenslayer 1988). Preliminary information is presented Section 3.6, Botanical and Wildlife Resources of the PAD.

- Conduct wildlife reconnaissance surveys to characterize wildlife use.

  - Surveys will be conducted during the avian nesting season (March – June) to allow for identification of nests within the study area.

  - Survey methods will include both zigzag and linear transects depending on the survey area and terrain. Zigzag transects cover more ground and work well in larger habitat areas (e.g., mixed conifer forest) while linear transects work well in narrow habitats (e.g., riparian).

  - Species will be recorded as present if they are observed, species-specific vocalizations are heard, or if diagnostic field signs are found (e.g., scat, tracks, pellets).

  - Wildlife taxonomy will be based on California's Wildlife, Volumes I, II, and III (Zeiner et al. 1988-1990).

  - For each special-status species observed, a California Native Species Field Survey Form field survey form will be completed and submitted to the California Natural Diversity Database (CNDDB).

  - Provide an electronic database (Excel spreadsheet) of special-status wildlife observed to resource agencies and interested stakeholders.

- Record incidental observations of any special-status species during all field surveys completed in support of the relicensing of the Kern River No. 1 Hydroelectric Project.

EVALUATION OF PROJECT POWERLINE POLE CONFIGURATIONS

- Document the configuration of Project powerline poles and evaluate their consistency with Avian Power Line Interaction Committee (APLIC) guidelines (APLIC 2012) for any Project poles not previously evaluated as part of SCE's corporate-wide Avian Protection Program.

- Document any past avian electrocutions and mortalities on Project powerlines based on SCE and resource agency consultation.

- Provide an electronic database (Excel spreadsheet) of any avian electrocutions and mortalities to resource agencies and interested stakeholders.

EVALUATION OF OPEN-AIR SEGMENTS OF THE WATER CONVEYANCE SYSTEM

- Review and summarize historic information on wildlife entrapment.

- Review existing information (e.g., design drawings, aerial images, photographs, or drone footage) of open-air segments of the water conveyance system (i.e., the sandbox and open-air segments of flumes and conduits) to determine potential for these structures to entrap wildlife.

SPECIAL-STATUS SALAMANDER SURVEY

Habitat Assessment

- Consult with resource agencies and recognized experts to obtain additional information on known occurrences and habitat (including microsites) for special-status salamanders in the study area. Preliminary information is presented in Section 3.6, Botanical and Wildlife Resources of the PAD.

- Prepare preliminary maps of potential habitat within the study area (i.e., physical and biological features necessary for the conservation of the slender salamanders) using information from USFWS, Sequoia National Forest, and recognized experts with experience identifying special-status salamander microsites (e.g., microhabitats) in the Kern River Canyon. Sources include the following:

    - Recent aerial photographs of the study area.

    - Twelve-Month Finding for the Kern Plateau Salamander; Threatened Species Status with Section 4(d) Rule for the Kern Canyon Slender Salamander and Endangered Species Status for the Relictual Slender Salamander; Designation of Critical Habitat; Proposed Rule. (Federal Register, Vol. 87, No. 200, Pages 63150–63199) (USFWS 2022b).

    - Rationales for Animal Species Considered for Species of Conservation Concern, Sequoia National Forest (Forest Service 2019).

    - Elizabeth Jockusch; recognized slender salamander expert with experience in surveying and identification of microsites within the Kern River Canyon (E. Jockusch, pers. comm, 2023).

- Habitat (including microsite) requirements for each special-status salamander are summarized below:

    - Kern Canyon slender salamander:

        - Wet stream and seep margins within rocky narrow canyons supporting chapparal shrubs, sycamore, California buckeye, willow, Fremont cottonwood, interior live oak, canyon live oak, and foothill pine. Historically, the Kern Canyon slender salamander was found on exposed hillsides and open grasslands, but the primary habitat of the species is now limited to riparian habitats or other moist microsites (Lannoo 2005 and Jockusch 2021, pers. comm. *in* USFWS 2022b).

    - In addition, species experts indicate this species also occurs on rocky hillsides littered with talus and scree; these sites may be unassuming (i.e., moisture-associated vegetation is not visible except at very close range) and only slightly more mesic than the surrounding habitat (Jockusch et al. 2022).

  - Relictual slender salamander:

    - Seeps, perennial springs, and streams in rocky habitat supporting limited tree cover of oaks, buckeyes, sycamores, pines, and firs (USFWS 2022b).

    - This species is tightly associated with aquatic habitats compared to other slender salamanders, and is found in areas of reduced flow, such as side seeps and relatively flat terrain, but in contact with water or fully saturated soil (Jockusch et al. 2022).

  - Yellow-blotched salamander:

    - Coniferous forest, deciduous forest, oak woodland, and chaparral under logs, bark, moss, leaf litter, talus, and animal burrows, often near streams and creeks (Forest Service 2019).

- Develop preliminary GIS map of potential habitat and overlay information on Project facilities plus a protective buffer.

- Ground-truth preliminary GIS map and document any microsites not identified through existing information review, and agency and expert consultation.

- Biologists will follow decontamination guidelines consistent with the *Declining Amphibian Task Force Fieldwork Code of Practice* (Declining Amphibian Task Force 2005).

- Prepare a GIS map of special-status salamander habitat in the study area.

Visual Encounter Survey

- A VES will be conducted in special-status salamander habitat mapped as part of the habitat assessment.

- Pedestrian VES will be seasonally timed to maximize the potential for observing special-status slender salamanders based on the timeframes described in USFWS (2022) and as refined based on consultation with recognized salamander experts in the Kern River Canyon (E. Jockusch, pers. comm., 2023).

  - Surveys will be conducted within 2 days following a rain event when slender salamanders are generally easier to observe, and habitats are damp. In the lower Kern River Canyon this typically occurs in February and March.

- Surveys will generally follow the methods described in Grover (2006) and may include lifting, overturning, and carefully replacing objects such as rocks, boards, and debris; carefully searching leaf litter and under loose tree bark; and inspecting burrows and rock crevices. Aquatic habitat will be surveyed by slowly walking the water's edge, scanning for salamanders in water, and overturning cover objects in the water. Rock outcrops will be searched with spotlights and shining lights into suitable crevices. Biologists will take care to minimize disturbance to suitable habitat and animals during field surveys.
    - If special-status salamanders are observed, the individual or populations will be documented and recorded with a global positioning system (GPS) unit, photographed, and a photograph of the habitat where the individual/population is observed will be obtained.
        - Slender salamanders will be identified to species in the field to the extent possible based on Jockusch et al. (2012), Stebbins (2003), and other references; individual salamanders will not be collected for later identification.
    - Special-status reptiles such as legless lizards, night lizards, and snakes may also be found using these methods, though the survey will target special-status salamanders. If any special-status reptile is observed, information listed above will also be collected for each observation.
- Biologists will follow decontamination guidelines consistent with the *Declining Amphibian Task Force Fieldwork Code of Practice* (Declining Amphibian Task Force 2005).
- For all special-status salamanders or reptiles observed, a California Native Species Field Survey Form will be completed and submitted to the CNDDB.
- A table and map will be developed summarizing the results of surveys and location of any special-status species observed.

SPECIAL-STATUS BAT ROOST AND SEASONAL USE SURVEYS

Facility Assessment

- Conduct an initial desktop assessment of Project facilities to determine each facility's potential to support bat roosts. Information to be reviewed includes:
    - Existing photographs of Project facilities.
    - Descriptions of Project facilities from included in Section 2.0 of the PAD.
- Conduct a preliminary visual field assessment of Project facilities, during wildlife reconnaissance surveys, to determine the potential to support bat roosts.
- Develop a list of Project facilities potentially supporting bat roosts (by facility type).

Reproductive Survey

Reproductive surveys include roost surveys, guano DNA sampling, and acoustic sampling. Each of these surveys is described below.

Roost Surveys

- Conduct a visual roost survey at Project facilities identified as potentially supporting roosting bats. The assessment will be conducted June–August during the maternal roosting period when colonies may still be present, but after the critical sensitive period (i.e., parturition and early nursing period).

- Facilities will be closely inspected for bat roost signs (e.g., skeletons, dead young, placentas, guano deposits, urine staining, and culled insect parts) and/or live bats. If bats are observed, the species, roost type (day roost/night roost/maternal roost), and number of adults and/or juveniles will be determined by a qualified biologist. Any location where bat species cannot be determined from visual evaluations will be monitored at emergence time using acoustic equipment.

Guano DNA Sampling

- DNA samples will be collected at roost sites where fresh guano is available and bat species could not be determined visually during the roost survey.

- The samples will be stored in a stabilizing solution to prevent DNA degradation and submitted to the Genidaqs SM Molecular Biology and Genetics Lab (Cramer Fish Sciences) for DNA sequencing and species identification.

- DNA sequences will be compared to species-specific genetic markers developed by Walker et al. 2016 and further verified by comparison to samples at the National Center for Biotechnology Information DNA sequence database.

- A table and map will be developed identifying the location of guano DNA sampling and sequencing results (i.e., species present), if applicable.

Acoustic Sampling

- Conduct acoustic sampling (i.e., sampling of echolocation calls) during the reproductive season at potential flight corridors between potential roosting habitat and foraging habitat, and any additional locations where bats were detected during roost surveys but were not identified to species.

- Acoustic sampling will be conducted using full-spectrum Wildlife Acoustics SM4BAT-FS detector units (acoustic units). Sonogram files will be processed using Kaleidoscope Pro 4.5.5 (Wildlife Acoustics), which auto-classifies each sonogram into tentative species determinations with 70 to 80 percent accuracy. The Anabat Insight software program will then be used to further classify files and reduce the amount of time required to manually inspect sonograms. Finally, a

qualified bat biologist will review the auto-classified sonograms to confirm species designations.

- The acoustic units will be operated at the selected sites for 5 nights from sunset until sunrise between June and August.

Seasonal Use Surveys

- Conduct an additional survey in October at those locations where active roosts were identified and/or within flight corridors between roost sites and potential foraging habitat to determine seasonal patterns of use. This survey will entail acoustic sampling as described above.

- Upon completion of the reproductive and seasonal use surveys, SCE will complete the following deliverables:

  - Develop a GIS map of special-status bat roosts and overlay information on Project facilities.

  - For all special-status bats observed, a California Native Species Field Survey Form will be completed and submitted to the CNDDB.

  - Provide an electronic database (Excel spreadsheet) of special-status bat survey data to resource agencies and interested stakeholders.

REPORTING

- Study methods and results will be documented in a TERR 2 – Wildlife Resources Technical Study Memo (TSM). The TSM will include summary tables and maps, as appropriate.

- Upon request, data will be provided to resource agencies and interested stakeholders in an Excel spreadsheet (electronic format).

SCHEDULE

Date	Activity
April–June 2024	Conduct wildlife reconnaissance surveys (during the avian nesting season) and evaluation of open-air segments of Project water conveyance system
June–August 2024	Conduct special-status bat reproductive surveys
October 2024	Conduct special-status bat seasonal use surveys
January 2025	Conduct special-status salamander habitat assessment
February–March 2025	Conduct special-status salamander VES (following rain events)
November 2024–May 2025	Analyze data and prepare draft technical memo
May 2025–August	Stakeholders review and provide comments on draft technical memo (90 days)

Date	Activity
September–October 2025	Resolve comments and prepare final technical memo
December 31, 2025	Distribute final technical memo in Draft License Application

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TABLES

Table TERR 2-1. Kern River No. 1 Hydroelectric Project – Project Facilities

Diversion Dam
Democrat Dam
Impoundment
Democrat Dam Impoundment
Water Conveyance System
Sandbox
Tunnels, Flumes, Conduits, and Adits
Forebay
Forebay Overflow Spillway
Penstock
Powerhouse and Switchyard
Kern River No. 1 Powerhouse and Switchyard
Access Roads
Willow Spring Creek Road (also referred to as Democrat Dam Road)
Powerline Road
Flume No. 1 Road
Dougherty Creek Road
Stark Creek Road
Forebay Operations Area Road
Lower Powerhouse Road
Upper Powerhouse Road
Access Trails
Democrat Gage Trail
Conduit No. 3 Trail
Cow Flat Creek Trail
Steel Flume Trail
Lucas Creek Trail
Dougherty Creek Trail
Stark Creek Trail
Adit 17 & 18 Trail
Overflow Spillway Trail
Skip Hoist / Forebay Trail
Communication and Power Lines
Intake Gatehouse to Flume No. 1 Powerline
Powerhouse to Forebay Communication / Powerline

Gages and Stilling Wells
Kern River near Democrat Springs (USGS Gage No. 11192500 / SCE Gage No. 409)
Kern River No. 1 Conduit near Democrat Springs (USGS Gage No. 11192000 / SCE Gage No. 410)
Kern River near Democrat Springs (USGS Gage No. 11192501; calculated 11192500+11192000)
Stilling Well No. 1
Stilling Well No. 2
Ancillary and Support Facilities
Democrat Dam Area
Buoy Line in Democrat Dam Impoundment
Democrat Dam Intake Gatehouse
Democrat Dam Drainage Tower
Democrat Dam Drainage Tunnel
Democrat Dam Drainage Tunnel Outlet
Democrat Dam Access Walkway
Sandbox Drainage Channel
Gaging Cableway
Water Conveyance
Flume No. 6 Access Platform
Forebay Operations Area
Old Admin Building
Garage No. 1
Garage No. 2
Old Ice House
Water Tank
Aerial Cable Tower
Skip Hoist House and Lower Landing
Skip Hoist Cables and Cart
Skip Hoist Upper Landing
Skip Hoist Upper Landing to Forebay Catwalk
Communication Site
Forebay Operations Area Perimeter Fence
Forebay Perimeter Fence
Powerhouse Area
Machine Shop
Office / Lunchroom
Restroom
Powerhouse and Switchyard Perimeter Fence