SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Wayne P. Allen
Principal Manager
Regulatory Support Services

Filed Electronically

May 26, 2022

Federal Energy Regulatory Commission
Kimberly D. Bose, Secretary
888 First Street, N.E.
Washington, DC 20426

Subject: Rush Creek Hydroelectric Project, FERC Project No. 1389-059; Proposed Study Plan

Dear Secretary Bose:

Pursuant to section 5.11 of the Federal Energy Regulatory Commission's (FERC) Integrated Licensing Process regulations, 18 C.F.R. § 5.11, Southern California Edison Company (SCE) hereby files its Proposed Study Plan for the Rush Creek Project (Project), FERC Project No. 1389.

The Proposed Study Plan provides background information on the status of the relicensing process completed to date and document organization (Section 1); describes development of SCE's technical study plans (Section 2); provides information regarding the required study plan meeting (Section 3); defines the process for study implementation and reporting (Section 4); and describes the initial and updated study reports and meeting schedule (Section 5). The Proposed Study Plan also contains Appendix A which includes stakeholder study requests filed with FERC, and Appendix B which includes SCE's proposed resource-specific technical study plans for the Project.

The Proposed Study Plan and other Project relicensing documents can be obtained from FERC's website at www.ferc.gov/docs-filing/elibrary.asp or SCE's Rush Creek Project relicensing website at www.sce.com/rushcreek. In accordance with FERC's Process Plan and Schedule contained in Appendix A of Scoping Document 1, any individual or entity interested in submitting comments on the Proposed Study Plan must do so by August 28, 2022. FERC encourages electronic filing or commenting. Instructions regarding using FERC's eFiling or eComment systems are available at http://www.ferc.gov/docs-filing/efiling.asp.

As required by 18 C.F.R. § 5.11(e), SCE will conduct a virtual study plan meeting on June 16, 2022 to: (1) provide an overview of the Proposed Study Plan; (2) discuss study requests/comments from stakeholders; and (3) attempt to resolve any outstanding issues. Meeting details are as follows:

Date:	June 16, 2022
Time:	9:00 am – 12:00 pm
Location:	Teams Meeting (Invitation to be Distributed Separately)

1515 Walnut Grove Avenue
Rosemead, CA 91770
626.302.9741
wayne.allen@sce.com

SCE looks forward to working with the FERC and other interested stakeholders on the Project relicensing. If you have any questions regarding this filing, please contact Matthew Woodhall, SCE Relicensing Project Manager, by phone at (909) 362-1764 or via e-mail at matthew.woodhall@sce.com.

Sincerely,

SOUTHERN CALIFORNIA EDISON COMPANY

DocuSigned by:
Wayne Allen
106CF18A73D445F...

Wayne P. Allen
Principal Manager
Regulatory Support Services

Enclosure:

- Proposed Study Plan for the Rush Creek Hydroelectric Project

SOUTHERN CALIFORNIA EDISON COMPANY

Rush Creek Hydroelectric Project
FERC Project No. 1389

PROPOSED STUDY PLAN

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Prepared by:
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May 2022

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APPENDICES

ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
ELAP	Environmental Laboratory Accreditation Program
ESI	existing scenic integrity
FERC	Federal Energy Regulatory Commission
HPMP	Historic Properties Management Plan
NEPA	National Environmental Policy Act
NFS	National Forest Service
NGO	Non-governmental organizations
NHPA	National Historic Preservation Act
PAD	Pre-Application Document
Project	Rush Creek Project
SCE	Southern California Edison Company
SD1	Scoping Document 1
SHPO	State Historic Preservation Officer
SIO	scenic integrity objectives
SNYLF	Sierra Nevada Yellow-legged Frog
SWB	State Water Board
TSP	Technical Study Plan
TSR	Technical Study Report
TWG	Technical Working Group
UAV	Unmanned aerial vehicle
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The following provides Southern California Edison Company's (SCE) Proposed Study Plan for the relicensing of the Rush Creek Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 1389, required by the Code of Federal Regulations (CFR), Title 18, Chapter I, Subchapter B, Part 5, § 5.11. To relicense the Project, SCE is using FERC's Integrated Licensing Process as specified in 18 CFR §§ 5.1 through 5.31.

On December 16, 2021, SCE filed a Notice of Intent and Pre-Application Document (PAD) with FERC to seek a new license for the existing 13.01-megawatt Rush Creek Project. The PAD provided FERC, federal and state resource agencies, local governments, Native American Tribes, non-governmental organizations (NGO), and other interested parties with existing, relevant, and reasonably available information related to existing Project facilities, operations, and maintenances activities; Proposed Project alternatives; environmental and cultural resources; and potential Project-related resource issues. The PAD also included 15 Draft Technical Study Plans that SCE determined were needed to address potential issues for which existing information may not be adequate.

On February 14, 2022, FERC issued a Notice of Commencement of the Proceeding and Scoping Document 1 (SD1) for the Rush Creek Project relicensing. FERC also requested that any individual or entity interested in providing comments on the PAD, SD1, and/or submitting formal study requests do so by April 15, 2022.

During the comment period, FERC conducted public scoping meetings (daytime and evening) on March 14, 2022. Due to on-going concerns with large gatherings related to COVID-19, FERC conducted a virtual scoping meeting via telephone conference line and directed stakeholders to a virtual site tour of the Project available on SCE's relicensing website (www.sce.com/rushcreek). Transcripts of FERC's scoping meetings can be found on FERC's eLibrary at https://www.ferc.gov/docs-filing/elibrary.asp.

This document describes development of SCE's technical study plans (Section 2); provides information regarding the required study plan meeting (Section 3); defines the process for study implementation and reporting (Section 4); and describes the initial and updated study reports and meeting schedule (Section 5).

2.0 DEVELOPMENT OF TECHNICAL STUDY PLANS

2.1 DRAFT TECHNICAL STUDY PLANS

Based on existing Project operation and maintenance activities; Proposed Project alternatives; summary of existing information; and responses to the Project Information Questionnaire, SCE developed 15 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 impacts 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 analysis and/or development of models to support evaluation of potential protection, mitigation, and enhancement measures. In addition, the study plans were expanded and are broader in scope due to the complexity of the actions under consideration in the relicensing proceeding, including:

- Continued operation and maintenance of the modified Project;[1]
- Partial or full removal of Agnew and Rush Meadows dams;[2]
- Dam modification and retrofitting of Gem Dam;
- Restoration of the former inundation zone of Waugh (Rush Meadows), Agnew, and Gem[3] lakes;
- Enhancement of the Lower Rush Creek and South Rush Creek channels[4]; and
- Assessment of sediment deposition in Rush Creek near the Silver Lake inlet.

2.2 TECHNICAL WORKING GROUP MEETINGS

Following filing of the PAD, SCE convened a series of Technical Working Group meetings during February, March, and April 2022 (**Table 1**) to review and refine the Draft Technical Study Plans, as appropriate. Technical Working Group meetings included presentations of each study plan and dialogue with participants to answer comments/questions and discuss/address refinement of the study approach and methodologies. Both verbal and written comments were provided by the stakeholders. Based on the stakeholder comments, SCE revised the study plans, as necessary, to address comments and try to reach consensus. At the conclusion of the Technical Working Group meetings, SCE prepared Updated Draft Technical Study Plans and distributed these to meeting participants on April 5, 2022.

2.3 STAKEHOLDER STUDY REQUESTS

In response to FERC's Notice of Commencement of Proceeding, the following entities filed study requests/comments with FERC:

[1] The Proposed Project includes: (1) removal of Agnew and Rush Meadows dams such that no water is impounded, and (2) the lowering and retrofitting of Gem Dam. Overall storage in the Project reservoir under the Proposed Project is reduced from 23,315 acre-feet (ac-ft) to 10,752 ac-ft (reduction of 12,563 ac-ft). Operations of the Proposed Project in the future, only affects Gem Lake water levels and flows in the stream reaches downstream of Gem Dam. For more information, refer to Section 3.0, Proposed Project in the Rush Creek PAD.

[2] In both alternatives for Rush Meadows and Agnew dams, the dams will no longer capture and store water resulting in upland habitat and an active stream channel within the former lakebed.

[3] Gem Dam will be lowered and retrofitted as part of the Proposed Project resulting in a reduced storage capacity resulting in upland habitat and an active stream channel within a portion of the former lakebed.

[4] The Proposed Project includes evaluating potential enhancement of the Rush Creek channel to address local flooding of residences during high-runoff events.

- U.S. Forest Service, Inyo National Forest
- California Department of Fish and Wildlife
- Friends of the Inyo
- State Water Resources Control Board

Appendix A includes letters containing stakeholder study requests/comments filed with FERC. **Table 2** provides a summary of stakeholder study requests and SCE's responses.

General comments on the PAD and SD1 were also provided by the aforementioned entities, as well as the following parties:

- American Rivers and California Sportfishing Protection Alliance
- East Shore Silver Lake Improvement Association
- Environmental Protection Agency
- June Lake Regional Planning Advisory Committee

General comments on the PAD and SD1 are not addressed in this document, however, SCE will consider these comments during preparation of the License Application and incorporate relevant information and analysis, as appropriate.

2.4 PROPOSED STUDY PLAN

In late April 2022, SCE conducted two site visits to evaluate proposed gaging and water temperature recorder locations to facilitate 2023 study implementation. In addition, SCE also completed a review of the Updated Draft Technical Study Plans. Based on information from the site visits and review of the study plans, SCE made minor revisions to the AQ 1 – Instream Flow Technical Study Plan (table error), AQ 3 – Water Temperature Technical Study Plan (minor adjustment of water temperature monitoring locations based on site conditions and security of equipment), AQ 4 – Water Quality Technical Study Plan (minor adjustment of water quality monitoring locations based on site conditions), and the CUL – 3 Tribal Technical Study Plan (renamed to TRI 1 – Tribal Technical Study Plan) as summarized in **Table 3**. SCE also made minor formatting adjustments and corrected typographical errors within various plans, as appropriate.

Appendix B includes SCE's proposed resource-specific technical study plans which incorporate SCE-initiated revisions and select stakeholder study requests. The study plans proposed for the Rush Creek Project relicensing, organized by resource area, are listed below.

Aquatic Resources

- AQ 1 – Instream Flow
- AQ 2 – Hydrology
- AQ 3 – Water Temperature

- AQ 4 – Water Quality
- AQ 5 – Geomorphology
- AQ 6 – Fish Population and Barriers
- AQ 7 – Special-status Amphibians

Cultural and Tribal Resources

- CUL 1 – Built Environment
- CUL 2 – Archaeology
- TRI 1 – Tribal[5]

Land Resources

- LAND 1 – Aesthetics
- LAND 2 – Noise

Recreation Resources

- REC 1 – Recreation

Terrestrial Resources

- TERR 1 – Botanical
- TERR 2 – Wildlife

2.4.1. Content and Organization of Study Plans

The following presents the general content and organization of the technical study plans provided in **Appendix B**:

- Potential Resource Issues – This section identifies the environmental or cultural resource issues that are specifically addressed in the study.
- Project Nexus – This section describes potential direct and indirect effects on environmental and cultural resources of: (1) continued operation and maintenance of a modified Project; (2) decommissioning/retrofitting of Project dams; (3) restoration of the decommissioning/retrofitting construction areas and former lakebeds/stream channels no longer subject to inundation; and (4) potential enhancement of the lower Rush Creek channel.
- Relevant Information – This section describes available information that was reviewed to determine resource study needs.

[5] The Tribal Resources TSP, which was previously referred to as CUL 3, was renamed to TRI 1 – Tribal Resources TSP.

- Potential Information Gaps – This section identifies information gaps that the study will fill.
- Study Objectives – This section describes the specific objectives of the study organized by action under consideration.
- 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.
- Schedule – This section presents a detailed schedule for implementation of each study, including data collection and stakeholder consultation; data analysis and report preparation; draft report distribution; stakeholder review and comment period; comment resolution; and final report distribution.

2.4.2. Other Study Plan Components

The following sections describe three additional study plan components that apply to all study plans. These components are not addressed individually within each study plan.

2.4.3. Relevant Resource Agency Jurisdiction/Management Goals

Table 4 identifies relevant resource agency jurisdiction/management goals related to the operation and maintenance of the Rush Creek Project. This list reflects the general content and range of management goals that may be under consideration for the Rush Creek 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.

2.4.4. 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 technical study plans are consistent with generally accepted practice in the scientific community. The technical study plans were collaboratively developed with technical experts representing the licensee, federal and state resource agencies, local governments, Native American Tribes, NGOs, and other interested parties. 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.

2.4.5. Consideration of Level of Effort and Cost

The overall objective of the technical study plans, provided in **Appendix B**, is to develop sufficient information to identify potential Project impacts and collaborate on the Proposed

Project included in the License Application. The study plan approaches were evaluated first to verify that the desired information was focused on potential impacts 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 accepted practices in the scientific community. The technical study plans provided in **Appendix B** meet these evaluation criteria. **Table 5** presents the estimated level of effort and cost for completion of each technical study plan.

3.0 STUDY PLAN MEETING

SCE will conduct a virtual study plan meeting on June 16, 2022 with stakeholders to: (1) provide an overview of the Proposed Study Plan; (2) discuss study requests/comments from stakeholders; and (3) attempt to resolve any outstanding issues. Meeting details are as follows:

- Date: June 16, 2022
- Time: 9:00 am – 12:00 pm
- Location: Teams Meeting (Invitation to be Distributed Separately)

The overall study plan development schedule is included in **Table 6**. The schedule includes timeframes for formal dispute resolution even though SCE anticipates that consensus with stakeholders on the study plans will be reached without the need for formal dispute resolution.

4.0 STUDY PLAN IMPLEMENTATION AND REPORTING

SCE has a well-defined process for the manner and extent information obtained during implementation of the study plans will be provided to stakeholders. Each technical study plan contains a detailed schedule for data collection and analysis, development and distribution of Draft Technical Study Reports, and stakeholder review and comment. **Table 7** provides an overview of these activities for each study plan. In general, a 90-day comment period is provided for stakeholder review of each Draft Technical Study Report. An additional 60- to 90-day period is also allocated in the schedule to resolve stakeholder comments on the Draft Technical Study Reports and to develop and distribute the Final Technical Study Reports.

5.0 INITIAL AND UPDATED STUDY REPORTS AND MEETINGS

During study implementation, SCE will file an Initial and Updated Study Report (approximately October 2023 and 2024, respectively) with FERC describing overall progress in implementation of the 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 (approximately November 2023 and 2024, respectively) with stakeholders and FERC to discuss the study results and SCE's or other participant's proposals, if any, to modify the study plans in light of the progress of the study plan and data collected. Within 15 days following each meeting, SCE will file a meeting summary, including any modification to ongoing studies or new studies proposed by SCE. The timing of these activities will be e-mailed to stakeholders in advance and posted on SCE's relicensing website at www.sce.com/RushCreek.

TABLES

Table 1. Technical Working Group Meeting Schedule

Technical Study Plan	Week Starting									
	31-Jan	7-Feb	14-Feb	21-Feb	28-Feb	7-Mar	14-Mar	21-Mar	28-Mar	4-Apr
Aquatic Resources										
AQ 1 – Instream Flow / AQ 5 – Geomorphology		Feb 8 1-4 pm			Mar 1 1-4 pm			Mar 24 1-4 pm		
AQ 2 – Hydrology	Feb 1 1-4 pm			Feb 22 9 am-12 pm			Mar 15 1-4 pm			
AQ 3 – Water Temperature	Feb 3 9 am-12 pm			Feb 23 9 am-12 pm			Mar 16 9 am-12 pm			
AQ 4 – Water Quality										
AQ 6 – Fish Population and Barriers			Feb 15 1-4 pm			Mar 8 1-4 pm			Mar 29 1-4 pm	
AQ 7 – Special-status Amphibians										
Cultural and Tribal Resources										
CUL 1 – Built Environment		Feb 9 9 am-12 pm			Feb 28 9 am-12 pm			Mar 22 9 am-12 pm		
CUL 2 – Archaeology										
TRI 1 – Tribal										
Land Resources										
LAND 1 – Aesthetics				Feb 24 1-4 pm			Mar 17 9 am-12 pm			Apr 5 1-4 pm
LAND 2 – Noise										

Technical Study Plan	Week Starting									
	31-Jan	7-Feb	14-Feb	21-Feb	28-Feb	7-Mar	14-Mar	21-Mar	28-Mar	4-Apr
Recreation Resources										
REC 1 – Recreation			Feb 17 9 am-12 pm			Mar 10 1-4 pm			Mar 31 9 am-12 pm	
Terrestrial Resources										
TERR 1 – Botanical		Feb 10 1-4 pm			Mar 3 9 am-12 pm			Mar 23 9 am-12 pm		
TERR 2 – Wildlife										

Table 2. Stakeholder Study Requests and Associated SCE Responses

Study Request / Comment	SCE Response
U.S. Forest Service, Inyo National Forest **Date filed with FERC: April 14, 2022**	
LAND 1 – Aesthetics Technical Study Plan We suggest that the study objectives include the development of visual renderings for all proposed alternatives including partially decommissioned, decommissioned, or retrofitted facilities, as well as for all construction activity areas (either temporary or seasonal) that may be visible to the public. Further, any proposed efforts to remediate or rehabilitate the landscape, should be included for analysis purposes. Reference: Page 11, Paragraph 2	**Response USFS-1**: The LAND 1 – Aesthetics TSP was revised to include a new study objective to prepare visual renderings of Proposed Project alternatives, including: • Rush Meadows Dam – full and partial removal • Gem Dam – retrofit • Agnew Dam – full and partial removal At this time, details related to restoration and/or enhancement areas are not known. Based upon study results, SCE will develop a restoration/enhancement plan for inclusion in the License Application. Based on details in the restoration/enhancement plan, visual renderings will be prepared and included in the impact analysis associated with aesthetic resources in the License Application.
New Study Plan Request: Wilderness Project Decommissioning Assessment The goal of the study is to develop information necessary to determine the potential impacts of decommissioning Gem Lake in combination with Waugh Lake, and any other Project facilities found within the Ansel Adams Wilderness. This information will be collected to ensure that potential land use changes conform with the relevant land management direction. The PAD does not contain information to assess the decommissioning or potential removal of Gem Lake. As there is uncertainty regarding the pathway to authorize non-conforming project works in wilderness, understanding the effects of decommissioning this feature is necessary to develop and plan measures that address all potential Project outcomes. This study would augment efforts already proposed by SCE to evaluate partial removal and decommissioning of Waugh and Agnew. Reference: Pages 12–13	**Response USFS-2**: SCE does not adopt the Forest Service's Wilderness Project Decommissioning Assessment study request. <u>Rationale</u> SCE disagrees with the Forest Service's view that there is uncertainty regarding the pathway to relicense the Project in the Wilderness. Both the FERC-issued license for the Project and associated power site reservation created under section 24 of the Federal Power Act predate the Wilderness Act of 1964, in which the Minarets Wilderness Area (subsequently renamed as Ansel Adams Wilderness) was designated. As such, the Project is an "existing private right" under section 4(c) of the Wilderness Act. In fact, FERC previously relicensed the Project following the establishment of the Wilderness Area, which confirms that the Project is an existing private right. For additional details, please refer to **Appendix C** which includes SCE's recent filing (May 20, 2022) on this issue (FERC Accession No. 20220520-5230). Because the Forest Service's request for a decommissioning study for Gem Dam appears predicated on its misunderstanding of the Wilderness Act as applied to the Project, there is no basis for its proposed decommissioning assessment. Moreover, the Forest Service's proposed decommissioning assessment is inconsistent with well-established FERC precedent maintaining that decommissioning is not a reasonable alternative to relicensing. SCE has stated its unequivocal intent to seek a new license for the Project. This Project offers

Study Request / Comment	SCE Response
	valuable carbon-free capacity and energy to SCE's generation portfolio, supports local recreation, is strategically located, provides local reliable power and energy during islanding events, and will become more valuable as the electric grid continues to transition to non-emitting resources. SCE is firmly committed to continuing to operate and maintain the Gem Lake Development of the Project through a new license term. For additional details, please refer to **Appendix C** which includes SCE's recent filing (May 20, 2022) on this issue (FERC Accession No. 20220520-5230).
California Department of Fish and Wildlife **Date filed with FERC: April 15, 2022**	
TERR 2 – Wildlife Resources Technical Study Plan CDFW is concerned with the proposed aerial raptor survey methodologies, timing and buffer distances from raptor nests, and has discussed these concerns with SCE during Technical Working Group (TWG) meetings. CDFW has proposed researching the potential to use drones instead of helicopters for aerial raptor surveys. SCE provided an Updated Wildlife Resources Technical Study Plan (see attachment 1) to the TWG members on April 5, 2022, via email, that included the option to conduct surveys for nesting raptors via helicopter or drone, which CDFW appreciates. After internal review, CDFW has the following recommendations for conducting the proposed aerial raptor surveys… Reference: Page 2, Paragraph 2	**Response CDFW-1**: The TERR 2 – Wildlife Resources TSP was revised to remove aerial raptor nest surveys using helicopters and/or drones from the study approach. Rationale As requested by CDFW and the Technical Working Group (TWG), SCE conducted outreach to raptor experts and resource agencies to evaluate the potential use of drones (unmanned aerial vehicle [UAV]) and/or helicopters to conduct an aerial survey of raptor nests along potential helicopter flight paths associated with implementation of the Proposed Project. Consultation included phone calls, email correspondence, and focus group meetings with one or more of the following: • Carie Battistone, CDFW – Lead Scientist/Supervisor CNDDB, Former Statewide Raptor Coordinator • Dan Applebee, CDFW – Wildlife Diversity Program Manager • Brandy Wood, CDFW – Desert Inland Region 6, Senior Environmental Scientist • Alyssa Marquez, CDFW – Desert Inland Region 6, Environmental Scientist • Trisha Moyer, CDFW – Desert Inland Region 6, Habitat Conservation Program Supervisor • Dr. Joel "Jeep" Pagel, USFWS – Raptor Ecologist, National Raptor Program • Jen Brown, USFWS – Migratory Bird Permit Office, Supervisory Wildlife Biologist • Tracy Borneman, USFWS – Ecologist, Migratory Bird Program • Thomas Dietsch, USFWS – Migratory Bird Program and Carlsbad Office Liaison

Study Request / Comment	SCE Response
	• Jeff Kidd, Kidd Biological – UAV use and biological surveys Agency focus group meetings were held on March 22, 2022, with the CDFW Desert Inland Region 6 staff, and on April 19, 2022, with CDFW and USFWS representatives with expertise in aerial raptor surveys and/or the use of UAVs. Based on consultation, it was determined that USFWS cannot approve a TSP that includes use of UAVs for conducting raptor nest surveys because their use is considered to be a violation of the Airborne Hunting Act. Further, during the April 19 meeting, USFWS and CDFW recommended that SCE remove aerial raptor nest surveys (i.e., helicopter/UAV) from the TERR 2 – Wildlife Resources TSP and include the following: • Consult with local raptor experts to obtain historic and recent raptor nest records present in the FERC Project boundary and along proposed helicopter flight paths and to determine regional nesting chronology; • Map raptor nesting habitats along proposed helicopter flight paths and identify observation points that provide views of potential nesting habitats along the helicopter flight paths; and • Conduct ground-based raptor nest survey during the regional nesting period, as determined through consultation with resource agencies and local raptor experts: o Use trails and observation points to survey suitable nesting habitat. o In habitats that are inaccessible and cannot be viewed from observation points, breeding behaviors in adjacent areas should be documented, and the location of the activity should be triangulated. SCE has removed aerial raptor nest surveys from the TERR 2 – Wildlife Resources TSP and has added the consultation, mapping, and ground-based raptor nest surveys, as requested by USFWS and CDFW. SCE and the resource agencies also agreed to continue to discuss the option for use of helicopters/UAVs to conduct raptor surveys associated with future SCE monitoring activities. The TERR 1 TSP was also revised to remove helicopter use associated with ground truthing of vegetation alliances in inaccessible areas. Inaccessible areas will be evaluated using aerial photograph review.
TERR 2 – Wildlife Resources Technical Study Plan CDFW understands and appreciates that the proposed aerial survey methodology will continue to be developed in consultation with the Terrestrial	**Response CDFW-2**: See Response CDFW-1.

Study Request / Comment	SCE Response
TWG. CDFW requests that the language at the bottom of page TERR 2-4 of the Updated Draft Study Plan (submitted on April 5 via email to the TWG members) be amended to state, "*The specific aerial survey methodology to be implemented will be developed in consultation with the Terrestrial TWG, and approved by the participating regulatory agencies including, United States Fish and Wildlife Service, United States Forest Service, CDFW and the State Waterboard*". Reference: Page 4, Paragraph 1	
TERR 2 – Wildlife Resources Technical Study Plan CDFW requests SCE consider helicopter impacts to other terrestrial species including Sierra bighorn sheep and mule deer. Reference: Page 4, Paragraph 2	**Response CDFW-3**: The TERR 2 – Wildlife Resources TSP was not revised to incorporate the helicopter impact analysis into the study approach. Rationale The TSPs were developed to obtain relevant resource information to support a future impact analysis, not conduct the impact analysis. During preparation of the License Application, SCE will fully analyze potential impacts to Sierra bighorn sheep, mule deer, and other applicable terrestrial species from helicopter use during implementation of the Proposed Project. This analysis will be provided to relicensing stakeholders for review and comment in the Draft License Application (to be filed by January 31, 2025).
Friends of the Inyo **Date filed with FERC: April 15, 2022**	
TERR 2 – Wildlife Resources Technical Study Plan The draft TERR 2 – Wildlife Resources Technical Study Plan indicates that SCE proposes to conduct aerial surveys for nesting raptors, using a helicopter or drone. Friends of the Inyo is opposed to the use of helicopters or drones for raptor surveys due to the likelihood of disturbance of sensitive species including nesting birds. This is particularly true in the Ansel Adams Wilderness Area where drones should not be used. The proposal to conduct aerial surveys should be removed. Reference: Page 2, Section II, Item A	**Response FOTI-1**: SCE has removed aerial surveys (i.e., helicopters and/or drones) from the nesting raptor surveys in TERR 2 – Wildlife Resources TSP. Rather, SCE will use a habitat-based approach and visual ground surveys to document the presence of nesting raptors along the potential helicopter flight paths. See Response CDFW-1 for more detail.
LAND 1 – Aesthetics Technical Study Plan The draft Land 1 – Aesthetics Technical Study Plan indicates that SCE will study "the existing scenic integrity (ESI) of the Project facilities on NFS land compared to surrounding landscape conditions and scenic integrity objectives (SIO) established by the INF." In addition to any scenic integrity objectives established by the NFS, however, the study should also compare the scenic integrity of the project facilities with the congressional objectives of the Wilderness Act…	**Response FOTI-2**: SCE does not adopt the Friends of the Inyo's study request regarding comparison of the scenic integrity of the project facilities with the congressional objectives of the Wilderness Act. Rationale While SCE agrees that an aesthetics study is warranted and has proposed a study plan to evaluate aesthetic resources, it would be highly inappropriate to require this study to "compare the scenic integrity of the project facilities with the congressional objectives of the Wilderness Act." SCE acknowledges that

Study Request / Comment	SCE Response
Because it is uncommon to relicense a hydropower facility in a wilderness area, SCE must take these statutory SIOs into account when conducting its study of aesthetic impacts. The project should be undertaken so as to reduce the visual impacts of the project facilities (decommissioned or not) and exposed lakebeds. Reference: Page 3, Section II, Item B	the Project is partially located within Ansel Adams Wilderness. As explained in our response to USFS-2, however, the Project is exempt from Wilderness Act requirements as an "existing private right." For that reason, the only Wilderness Act "congressional objective" that applies to the Project is a recognition that Congress intended to protect existing private rights, like this project, from the objectives and standards of the Wilderness Act. For additional details, please refer to **Appendix C** which includes SCE's recent filing (May 20, 2022) on this issue (FERC Accession No. 20220520-5230).
State Water Resources Control Board **Date filed with FERC: April 18, 2022**	
AQ 4 – Water Quality Technical Study Plan State Water Board staff request the inclusion of fecal coliform sampling from Project reservoirs and sample analysis at an Environmental Laboratory Accreditation Program (ELAP) certified lab. Fecal coliform data will inform potential Project effects to recreational beneficial uses. Reference: Attachment A, Page 3, Item 5, Bullet 1	**Response SWB-1**: The AQ 4 – Water Quality TSP was revised to incorporate fecal coliform sampling at the Project reservoirs consistent with State Water Board's request.
AQ 4 – Water Quality Technical Study Plan State Water Board staff request water column mercury and methylmercury sampling of all project reservoirs be included in the Water Quality Technical Study Plans. Sample results will establish baseline conditions and inform whether additional sampling would be necessary… Given the 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. Reference: Attachment A, Page 3, Item 5, Bullet 2	**Response SWB-2**: No modifications to the AQ 4 – Water Quality TSP were necessary, based on follow-up consultation with the State Water Board. <u>Rationale</u> On April 22, 2022, SCE's consultant, Cardno, contacted State Water Board staff via email to clarify a study request in their comment letter. Specifically, SCE requested clarification of Comment 5, Bullet 2 regarding mercury and methylmercury in Project reservoir and fish tissue sampling that referenced an Attachment B. Attachment B was not provided with State Water Board's filing. In an email dated April 22, 2022, the State Water Board responded directly to SCE to "disregard the second bullet of comment 5 in the Water Board comment letter." Refer to email communication in Appendix A. Therefore, the AQ 4 – Water Quality TSP was not modified related to mercury and methylmercury or fish tissue sampling.

Study Request / Comment	SCE Response
AQ 4 – Water Quality Technical Study Plan The *Water Quality 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 years. State Water Board staff request the above study continues data collection for a minimum of two years. Reference: Attachment A, Page 3, Item 5, Bullet 3	**Response SWB-3**: No modifications to the AQ 4 – Water Quality TSP are proposed by SCE. <u>Rationale</u> Water quality sampling identified in the AQ 4 – Water Quality TSP is currently scheduled to be implemented for one year, from June–September 2023. The TSP includes a statement that "If potential water quality issues are identified, additional follow-up sampling may be necessary. Additional sampling, if necessary, will be determined in consultation with the resource agencies and other interested parties." SCE recommends evaluation of 2023 water quality sampling results be completed in consultation with State Water Board, resource agencies, and TWG participants to determine if a second year of data collection (2024) is necessary.

Notes: The following entities filed comments with FERC on Scoping Document 1 and the Pre-Application Document, however, had no comments on the study plans or study requests:

- American Rivers / California Sportfishing Protection Alliance
- East Shore Silver Lake Improvement Association
- Environmental Protection Agency
- June Lake Regional Planning Advisory Committee

Table 3. SCE-Initiated Revisions to Updated Technical Study Plans

Technical Study Plan / Reference	Revision
AQ 1 – Instream Flow Technical Study Plan	In Table AQ 1-1, for the Rush Creek Below Gem Dam to the Confluence with Reversed Creek stream segment (sampling locations RM 17.65–18.40 and RM 19.18–19.46), a portion of the methods and purpose text was erroneously copied from the row above. To correct this error, Table AQ 1-1 was revised as shown below.

Excerpt from Table AQ 1-1 Location of Selected Stream Segments for Instream Flow Modeling

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Methods	Purpose	Flow Range of Interest	Water Surface Elevation Calibration Flows (cfs)	Velocity Calibration/ Validation Flows (cfs)
Rush Creek							
Rush Creek Below Gem Dam to the Confluence with Reversed Creek	1.99 (RM 17.49–19.48)	RM 18.40–18.60 and RM 17.50–17.60	Cross-sections in 5 mesohabitat units (pool, run, low and high gradient riffle) in approx. proportion to availability	Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs
		RM 17.65–18.40 and RM 19.18–19.46	~~• Cross-sections in 5 mesohabitat units (pool, run, low and high gradient riffle) in approx. proportion to availability~~ 5 empirical plunge pool habitats	~~• Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation~~ Empirical aquatic habitat modeling	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs
		RM 17.50–17.60	HEC-RAS 1D/2D	Hydraulic modeling to evaluate potential enhancement of the Rush Creek Channel	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs 70–85 cfs if safe

Technical Study Plan / Reference	Revision
AQ 3 – Water Temperature	Water temperature sampling locations were slightly modified following a site visit on April 28, 2022 which identified more suitable locations for monitoring based on site conditions and security of equipment. Table AQ 3-1 was revised as shown below. The revised locations are depicted on Map AQ 3-1 which is included in the AQ 3 Technical Study Plan (Appendix B).

Excerpt from Table AQ 3-1 Water Temperature Sampling Locations

Stream Segment Name	Segment Length (miles) / River Mile (RM)	Sampling Location River Mile / Site ID	Sampling Dates
Rush Creek			
Reversed Creek	—	100–200 feet upstream of the confluence with South Rush Creek / RVC~~0.03~~ 0.26	May 15–Dec 1, 2023
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM ~~17.0~~ 17.15 / RC~~17.0~~ 17.15 RM ~~17.55~~ 17.6 / RC ~~17.55~~ 17.6	May 15–Dec 1, 2023
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.6 / RC15.6 RM ~~13.68~~ 13.7 / RC~~13.68~~ 13.7 (LADWP gaging station location)	May 15–Dec 1, 2023

Technical Study Plan / Reference	Revision
AQ 4 – Water Quality	Water quality sampling locations were slightly modified following a site visit on April 28, 2022 which identified more suitable locations for monitoring based on site conditions. Table AQ 4-1 was revised as shown below. The revised locations are depicted on Map AQ 4-1 which is included in the AQ 4 Technical Study Plan (Appendix B).

Excerpt from Table AQ 4-1 Water Quality Sampling Locations

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Number of Sampling Locations	*In-situ* Field Measurements	Water Quality Grab Samples	Reservoir / Lake Profiles
Rush Creek						
Reversed Creek	—	100–200 feet upstream of the confluence with South Rush Creek / RVC~~0.03~~ 0.26	1	X	X	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM ~~17.0~~ 17.15 / RC~~17.0~~ 17.15 RM ~~17.55~~ 17.6 / RC ~~17.55~~ 17.6	2	X	X	—

Technical Study Plan / Reference	Revision
CUL 3 – Tribal Resources	The CUL 3 – Tribal Resources Technical Study Plan was renamed TRI 1 – Tribal Resources Technical Study Plan to more accurately reflect the focus of the study as a stand-alone study from the CUL 1 – Built Environment and CUL 2 – Archaeology studies. The rationale for this name change is that the Tribal Resources Study addresses both cultural and natural resources under the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), and according to 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), and FERC regulations at 18 CFR § 2.1c, which added a policy statement on consultation with Tribes in FERC proceedings. Thus, the Tribal Resources Study does not actually fit under the cultural (CUL) naming convention because these plans (i.e., CUL 1 – Built Environment and CUL 2 – Archaeology) primarily address compliance with the NHPA.

Table 4. Relevant Resource Agency Jurisdiction / Management Goals

Agency	Resource Agency Jurisdiction / Management Goals	Rush Creek Project Technical Study Plans														
		AQ 1 – Instream Flow	AQ 2 – Hydrology	AQ 3 – Water Temperature	AQ 4 – Water Quality	AQ 5 – Geomorphology	AQ 6 – Fish Population and Barriers	AQ 7 – Special-status Amphibians	CUL 1 – Built Environment	CUL 2 – Archaeology	TRI 1 – Tribal	LAND 1 – Aesthetics	LAND 2 – Noise	REC 1 – Recreation	TERR 1 – Botanical	TERR 2 – Wildlife
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 (California 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 (California Fish and Game Code § 1802).	X	X	X	X	X	X	X							X	X
California Office of Historic Preservation	The California Office of Historic Preservation 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. Section 106 of the National Historic Preservation Act of 1966, as amended (54 United States Code § 300101 et seq.), requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. In accordance with section 101(b)(3) of the National Register of Historic Places, the State Historic Preservation Office advises and assists federal agencies in carrying out their Section 106 (36 CFR § 800) responsibilities and cooperates with such agencies, local governments, and organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development. The regulations implementing Section 106 (36 CFR § 800) define “historic properties” as any pre-contact or historic period district, site, building, structure, or individual object included in or eligible for inclusion in the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within historic properties, as well as Traditional Cultural Properties that meet the National Register Criteria.								X	X	X					
State Water Resources Control Board	A certification issued by the State Water Resources Control Board (State Water Board) for the Project must ensure compliance with the water quality standards in the Water Quality Control Plan for the Lahontan Region (Basin Plan). 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 (California Water Code, §§ 13241, 13050, subds. (h), (j)). The beneficial uses, together with the water quality objectives contained in the water quality control plans and applicable anti-degradation 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 anti-degradation requirements (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology* (1994) 511 U.S. 700, 714-719).	X	X	X	X	X	X	X								
U.S. Fish and Wildlife Service	Working with others to conserve, protect, and enhance, fish, wildlife, plants, and their habitats for the continuing benefit of the American people reflects the value the agency places on working in partnership with others. As the principal federal partner responsible for administering the Endangered Species Act, the U.S. Fish and Wildlife Service leads the recovery and conservation of imperiled species through protection of endangered and threatened species and conservation of candidate species and species-at-risk.	X	X	X	X	X	X	X							X	X

Agency	Resource Agency Jurisdiction / Management Goals	Rush Creek Project Technical Study Plans														
		AQ 1 – Instream Flow	AQ 2 – Hydrology	AQ 3 – Water Temperature	AQ 4 – Water Quality	AQ 5 – Geomorphology	AQ 6 – Fish Population and Barriers	AQ 7 – Special-status Amphibians	CUL 1 – Built Environment	CUL 2 – Archaeology	TRI 1 – Tribal	LAND 1 – Aesthetics	LAND 2 – Noise	REC 1 – Recreation	TERR 1 – Botanical	TERR 2 – Wildlife
U.S. Forest Service	The U.S. Forest Service (Forest Service) was established in 1905 to sustainably manage national forests and promote conservation across the country. The overriding objective of the Forest Service's forest management program is to ensure that the National Forests are managed in an ecologically sustainable manner. The National Forests were originally envisioned as working forests with multiple objectives: to improve and protect the forest, to secure favorable watershed conditions, and to furnish a continuous supply of timber for the use of citizens of the United States. Forest management objectives have since expanded and evolved to include ecological restoration and protection, research and product development, fire hazard reduction, and the maintenance of healthy forests. Guided by law, regulation, and agency policy, Forest Service forest managers use timber sales, as well as other vegetation management techniques such as prescribed fire, to achieve these objectives. The majority of the Project facilities occupy federal lands within the Inyo National Forest, which is under the jurisdiction of the Forest Service. A portion of the Project (Rush Meadows Dam, Waugh Lake, Gem Lake, and the upstream side of Gem Dam) is located within the Ansel Adams Wilderness Area. As such, much of the Project area is managed in accordance with the goals and policies of the 2019 Land Management Plan for the Inyo National Forest and the 2001 Wilderness Management Plan for the Ansel Adams, John Muir, and Dinkey Lakes Wildernesses.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Notes:
CDFW = California Department of Fish and Wildlife
CWA = Clean Water Act
FERC = Federal Energy Regulatory Commission
NHPA = National Historic Preservation Act
USFWS = U.S. Fish and Wildlife Service

Table 5. Total Cost and Level of Effort for Completing Technical Study Plans

Study Plan	Total Estimated Cost ($2022)	Total Level of Effort in Labor Hours (excludes ODCs)
Aquatic Resources		
AQ 1 – Instream Flow	1,446,000	6,780
AQ 2 – Hydrology	307,000	1,710
AQ 3 – Water Temperature	134,000	910
AQ 4 – Water Quality	253,000	1,530
AQ 5 – Geomorphology	449,000	2,510
AQ 6 – Fish Population and Barriers	198,000	1,190
AQ 7 – Special-Status Amphibians	136,000	820
Total	**$2,923,000**	**15,450**
Cultural Resources		
CUL 1 – Built Environment	146,000	1,200
CUL 2 – Archaeology	323,000	2,140
TRI 1 – Tribal	179,000	1,170
Total	**$648,000**	**4,510**
Land Resources		
LAND 1 – Aesthetics	102,000	410
LAND 2 – Noise	63,000	290
Total	**$165,000**	**700**
Recreation Resources		
REC 1 – Recreation	114,000	810
Total	**$114,000**	**810**
Terrestrial Resources		
TERR 1 – Botanical	441,000	2,760
TERR 2 – Wildlife	224,000	1,410
Total	**$665,000**	**4,170**
Project Total	**$4,515,000**	**25,640**

Table 6. FERC's Study Plan Determination Process

Responsible Party	Action	Date	FERC Regulation 18 CFR §
Applicant	File Proposed Study Plan	5/30/22	5.11(a)
All Stakeholders	Conduct Study Plan Meeting	6/29/22	5.11(e)
All Stakeholders	File Comments on SCE's Proposed Study Plan	8/28/22	5.12
Applicant	File Revised Study Plan	9/27/22	5.13(a)
All Stakeholders	File Comments on SCE's Revised Study Plan	10/12/22	5.13(b)
FERC	Issue Study Plan Determination	10/27/22	5.13(c)
FERC	Study Plan Approved, if No Disputes Filed	11/16/22	5.14(d)
Mandatory Conditioning Agencies / Tribes	*File Study Disputes*	*11/16/22*	*5.14(a)*
Dispute Panel	*Select Third Dispute Resolution Panel Member*	*12/1/22*	*5.14(d)*
Dispute Panel	*Convene Dispute Resolution Panel*	*12/6/22*	*5.14(d)(3)*
Applicant	*File Comments on Study Disputes*	*12/11/22*	*5.14(i)*
Dispute Panel	*Dispute Resolution Panel Technical Conference*	*12/16/22*	*5.14(j)*
Dispute Panel	*Issue Dispute Resolution Panel Findings*	*1/5/23*	*5.14(k)*
FERC	*Issue Study Dispute Determination*	*1/25/23*	*5.14(l)*

Source:
FERC, Scoping Document 1, Appendix A - Process Plan and Schedule, Rush Creek Hydroelectric Project No. 1389, February 14, 2022.

Notes:
Italicized actions are unnecessary if there are no study disputes.
When an activity is contingent on completion of a previous activity, the schedule assumes the previous activity is completed the latest date possible for that previous activity, unless otherwise indicated.
According to 18 CFR § 385.2007(a)(2), if a filing date falls on a Saturday, Sunday, or federal legal public holiday, the deadline for filing becomes the next business day.

Table 7. Proposed Technical Study Plan Implementation Schedule

Technical Study Plan	2022												2023												2024												2025											
	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	J	F	M	A	M	J	J	A	S	O	N	D
AQ 1 – Instream Flow																																																
Select Project-affected stream segments for instream modeling, complete mesohabitat mapping, and select study sites									■	■	■																																					
Consult with the interested resource agencies and stakeholders regarding: target species and life stages, habitat suitability criteria, and habitat modeling methods													■	■	■	■																																
Conduct field data collection (topography, water surface elevations, velocities, substrate/cover)																■	■	■	■	■	■	■																										
Analyze data and prepare draft report																						■	■	■	■	■																						
Distribute draft report to resource agencies and stakeholders																											■																						
Resource agency and stakeholders review and provide comments on draft report (90 days)																												■	■	■																		
Resolve comments and prepare final report																															■	■																
Distribute final report in Draft License Application																																	■															
AQ 2 – Hydrology																																																
Collaborate with stakeholder modeling working group on approach for refining the historical, existing, and unimpaired hydrology (as appropriate); and developing the Proposed Project hydrology									■	■	■																																					
Install temporary flow gages									■	■	■																																						
Develop Proposed Project hydrology and refine analysis of historical, existing, and unimpaired hydrology													■	■	■	■																																
Complete the hydrologic alteration analysis and flood-frequency analysis																■	■	■																															
Summarize data and prepare draft report (incorporating October 2022–September 2023 data)																			■	■	■	■	■	■																									
Distribute draft report to stakeholders																									■																								
Stakeholders review and provide comments on draft report (90 days)																										■	■	■																			
Resolve comments and prepare final report																												■	■																			
Uninstall temporary flow gages																																	■	■													
Distribute draft final report in Draft License Application (incorporating October 2023–September 2024 data)																																	■	■													
Distribute final report in Final License Application (incorporating comments by stakeholders on the draft final report filed with the Draft License Application)																																			■												

Technical Study Plan	2022												2023												2024												2025											
	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	J	F	M	A	M	J	J	A	S	O	N	D
AQ 3 – Water Temperature																																																
Install and maintain temperature probes																	■	■	■	■	■	■																										
Maintain low elevation (≤7,300 feet; powerhouse elevation) temperature probes																						■	■	■																									
Analyze data and prepare draft report																						■	■	■	■	■																						
Distribute draft report to stakeholders																											■																						
Stakeholders review and provide comments on draft report (90 days)																												■	■	■																		
Resolve comments and prepare final report																															■	■																	
Distribute final report in Draft License Application																																	■																
AQ 4 – Water Quality																																																
Conduct spring water quality *in-situ* and grab sampling																	■																																
Conduct monthly *in-situ* reservoir/lake profiling																	■	■	■	■	■																												
Conduct summer/fall water quality *in-situ* and grab sampling																					■																												
Analyze data and prepare draft report																						■	■	■	■	■																						
Distribute draft report to stakeholders																											■																						
Stakeholders review and provide comments on draft report (90 days)																												■	■	■																		
Resolve comments and prepare final report																															■	■																	
Distribute final report in Draft License Application																																	■																
AQ 5 – Geomorphology																																																
Conduct channel surveys (e.g., mesohabitat and Rosgen mapping)									■	■																																						
Complete data analysis													■	■	■	■																																
Conduct sediment capture/deposition surveys, sediment transport field surveys, sediment source surveys, and evaluation of potential restoration/enhancement measures in coordination with instream flow surveys																■	■	■	■	■	■	■																										
Analyze data and prepare draft report																						■	■	■	■	■																						
Distribute draft report to stakeholders																											■																						
Stakeholders review and provide comments on draft report (90 days)																												■	■	■																		
Resolve comments and prepare final report																															■	■																	
Distribute final report in Draft License Application																																	■																
AQ 6 – Fish Population and Barriers																																																
Characterize fish barriers/migration in Project-affected stream segments																	■	■	■	■																												
Conduct fish population sampling in Project-affected stream segments and Project reservoirs																			■	■	■																												
Analyze data and prepare draft report																						■	■	■	■	■																						
Distribute draft report to stakeholders																											■																						
Stakeholders review and provide comments on draft report (90 days)																												■	■	■																		
Resolve comments and prepare final report																															■	■																	
Distribute final report in Draft License Application																																	■																

Technical Study Plan	2022												2023												2024												2025											
	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	J	F	M	A	M	J	J	A	S	O	N	D
AQ 7 – Special-Status Amphibians																																																
Complete habitat mapping and conduct visual encounter surveys																																																
If occupied breeding/rearing habitat for SNYLF is identified in stream segments evaluated as part of implementation of the AQ 1 – Instream Flow TSP, quantification of habitat versus flow relationships will be developed																																																
Analyze data and prepare draft report																																																
Distribute draft report to stakeholders																																																
Stakeholders review and provide comments on draft report (90 days)																																																
Resolve comments and prepare final report																																																
Distribute final report in Draft License Application																																																
CUL 1 – Built Environment																																																
Convene interested stakeholders to discuss Draft Study Plan and adequacy of the APE																																																
Consult with SHPO regarding adequacy of the APE																																																
Conduct archival research and background review																																																
Conduct field inventory																																																
Analyze data and prepare draft TSR																																																
Distribute draft TSR to stakeholders																																																
Stakeholder review and provide comments on draft TSR (90 days)																																																
Resolve comments and prepare final TSR																																																
Develop Draft HPMP																																																
Distribute final TSR and Draft HPMP in Draft License Application																																																
CUL 2 – Archaeology																																																
Convene interested stakeholders to discuss Draft Study Plan and adequacy of the APE																																																
Consult with SHPO regarding adequacy of APE																																																
Conduct archival research and background review																																																
Develop and obtain consensus on Inventory and National Register of Historic Places Evaluation strategy and permitting approach																																																
Conduct field studies																																																	
Analyze data and prepare draft TSR																																																
Distribute draft TSR to stakeholders																																																
Stakeholder review and provide comments on draft TSR (90 days)																																																
Resolve comments and prepare final TSR																																																
Develop Draft HPMP																																																
Distribute final TSR and Draft HPMP in Draft License Application																																																

Technical Study Plan	2022 J	F	M	A	M	J	J	A	S	O	N	D	2023 J	F	M	A	M	J	J	A	S	O	N	D	2024 J	F	M	A	M	J	J	A	S	O	N	D	2025 J	F	M	A	M	J	J	A	S	O	N	D
TRI 1 – Tribal																																															
Meet with Tribal groups and resource agencies/stakeholders to discuss Draft Study Plan and adequacy of the APE	■	■	■	■																																											
Consult with SHPO regarding adequacy of APE			■	■	■																																									
Submit Tribal Resources technical qualifications to INF													■																																			
Conduct archival research													■	■	■	■	■	■	■	■	■	■																											
Engage Tribal groups to arrange meetings and establish protocols													■	■	■	■	■	■	■	■	■	■																											
Conduct Tribal interviews to identify Tribal resources													■	■	■	■	■	■	■	■	■	■																											
Compile results of data gathered, evaluate Tribal resources, and prepare draft TSR																						■	■	■	■																							
Distribute draft TSR to stakeholders																									■																							
Stakeholder review and provide comment on draft TSR (90 days)																										■	■	■																			
Resolve comments and prepare final TSR																												■	■	■																		
Develop Draft HPMP																												■	■	■	■	■																
Distribute final TSR and HPMP in Draft License Application																																■																
LAND 1 – Aesthetics																																															
Summarize land management direction and objectives, establish KOPs, and develop inventory forms													■	■	■																																	
Inventory, photo document, and assess Project facilities																	■	■	■																													
Photo document and characterize Horsetail Falls at five different flows, assuming spill flows are available																■	■	■	■																													
Analyze data and prepare draft report																				■	■	■	■	■																							
Distribute draft report to stakeholders																									■																							
Stakeholders review and provide comments on draft report (90 days)																										■	■	■																			
Resolve comments and prepare final report																													■	■																		
Distribute final report in Draft License Application																															■																
LAND 2 – Noise																																															
Identify sensitive receptors/ points of interest with resource agencies and stakeholders															■	■	■																															
Conduct noise surveys																		■	■	■	■	■																									
Analyze data and prepare draft report																						■	■	■	■																							
Distribute draft report to stakeholders																									■																							
Stakeholders review and provide comments on draft report (90 days)																										■	■	■																			
Resolve comments and prepare final report																													■	■																		
Distribute final report in Draft License Application																															■																

Technical Study Plan	2022 J	F	M	A	M	J	J	A	S	O	N	D	2023 J	F	M	A	M	J	J	A	S	O	N	D	2024 J	F	M	A	M	J	J	A	S	O	N	D	2025 J	F	M	A	M	J	J	A	S	O	N	D
REC 1 – Recreation																																															
Gather and analyze existing available use data (including wilderness permit data from the INF)													■	■	■																																	
Develop the survey instrument in consultation with the Forest Service and CDFW													■	■	■	■																															
Interview key information sources (i.e., INF, Frontier Pack Station Outfitter, local guides and outfitters, and June Lake homeowner's association representatives)													■	■	■	■																															
Conduct use counts and visitor surveys, and establish and maintain a temporary self-registration box at the Rush Creek Trail Trailhead																	■	■	■	■	■	■	■																								
Analyze data and prepare draft report																						■	■	■	■																							
Distribute draft report to stakeholders																									■																							
Stakeholders review and provide comments on draft report (90 days)																										■	■	■																			
Resolve comments and prepare final report																													■	■																		
Distribute final report in Draft License Application																															■																	
TERR 1 – Botanical																																															
Collect data to characterize riparian vegetation at long-term riparian monitoring sites (consistent with USFS 4[e] Condition 7)							■	■																																							
Conduct field surveys																		■	■	■	■																												
Analyze data and prepare draft report																						■	■	■	■																							
Distribute draft report to stakeholders																									■																							
Stakeholders review and provide comments on draft report (90 days)																										■	■	■																			
Resolve comments and prepare final report																													■	■																		
Distribute final report in Draft License Application																															■																	
TERR 2 – Wildlife																																														
Consult with resource agencies to obtain information on Sierra Nevada bighorn sheep													■	■	■	■																															
Conduct wildlife reconnaissance surveys, raptor nest surveys, and transmission line/power line pole evaluation																	■	■	■	■																											
Conduct bat surveys																		■	■	■																												
Analyze data and prepare draft report																						■	■	■	■																							
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APPENDIX A

Stakeholder Study Requests

U.S. Forest Service

USDA United States Department of Agriculture | Forest Service | Inyo National Forest | 351 Pacu Lane, Suite 200 Bishop, CA 93514

File Code: 2770
Date: April 14, 2022

Subject: Forest Service Comments On The Pre-Application Document, FERC Scoping Document 1, and New Study Requests For The Rush Creek Hydroelectric Project, P-1389

To: Wayne Allen Principal Manager, Southern California Edison Company

1515 Walnut Grove Ave. Rosemead, CA 91770

Dear Mr. Allen:

The Forest Service is providing the following response to the Pre-Application Document (PAD) filed by Southern California Edison Company (Licensee) for the Rush Creek Hydroelectric Project (FERC No. P-1389) on December 16, 2021, and the Federal Energy Regulatory Commission (FERC) Scoping Document 1 issued on February 14, 2022. Our filing also includes new study requests for this relicensing process. This response is being submitted by the USDA Forest Service, Inyo National Forest, hereafter referred to as "Forest Service".

This filing includes one attachment (Attachment 1) organized by sections of the PAD and Scoping Document 1. Attachment 1 has three parts:

I. Comments on FERC's Scoping Document 1
II. Comments on the Licensee's Pre-Application Document
III. New Study Requests

We look forward to working with the Licensee on the relicensing of this project. If you have any questions regarding this filing, please contact Sheila Irons, FERC Coordinator, at 760-965-9609- or by electronic mail at **sheila.irons@usda.gov**.

Sincerely,

LESLEY YEN Forest Supervisor

FERC File List

INYO National Forest Comments on Scoping Document 1, Pre-Application, and Relicensing Studies Rush Creek Hydroelectric Project No. 1389

Summary

This letter provides Forest Service comments and study requests for Southern California Edison's (SCE's) Rush Creek Hydroelectric Project, Federal Energy Regulatory Commission No. 1389 (Rush Creek or Project). Our comments are organized into four sections: Part I. Background Information; II. Comments on the FERC's Scoping Document 1 (SD1), issued February 14, 2022; III. Comments on SCE's December 16, 2021, pre-application document (PAD); and IV. Study Requests in accordance with 18 CFR 5.9(b). We note that the unique circumstances of this proceeding raise questions and uncertainty over study requests. We wish to clarify to the FERC that the Forest Service does not have a special authority to authorize, re-authorize, or address the general Federal Power Act and Wilderness Act concerns associated with this proceeding. Further, study requests made herein should not be interpreted as an endorsement of the Project. As decided in *High Sierra Hikers v. U.S. Forest Service*, reauthorizing non-conforming structures, particularly dams, is prohibited in designated Wilderness except as specifically provided for in the Wilderness Act, or an amendment thereto.

The Forest Service recognizes that the authority and responsibility to license or relicense non-federal hydroelectric projects within federal reservations resides solely with the FERC. We make no attempt to balance the interests of the Federal Power Act and Wilderness Act, and we are unable to ensure this Project would comply with our Land Management Plan direction for those portions that are managed for wilderness. Due in part to the unique questions and considerations that arise from this proceeding, we request that the FERC convene a technical conference prior to a Study Plan determination for the Project. A technical conference would allow stakeholders and the FERC to discuss the Wilderness Act concerns before committing extensive resources towards a licensing effort, without a clear pathway to authorization.

Part I: Background

The Rush Creek Hydroelectric Project, Federal Energy Regulatory Commission No. 1389, is a 13-megawatt (MW) project located to the west of June Lake, California. The project consists of: the 50 foot high Rush Meadows Dam, impounding the 185 acre Rush Meadows Reservoir (aka Waugh Lake); the 80 foot high Gem dam, impounding the 282 acre Gem Lake; the 30 foot high Agnew dam, impounding the 40 acre Agnew Lake; a 4,584 foot-long flowline from Gem Dam to the valvehouse near Agnew dam, a 575 foot-long flowline from Agnew Dam to the valvehouse; two 4,280 foot-long penstocks from the valvehouse to the powerhouse; a 150 foot long transmission line; and appurtenant facilities.

The project was developed by the Pacific Power Corporation and construction completed in 1917. Due in part to a dispute regarding water levels and water rights with Los Angeles Department of Water and Power, a license was not issued until 1939. The project was later acquired by Southern California Edison (SCE) in 1964. The original project license expired in 1986, and the project subsequently operated under annual licenses until FERC issued SCE a new license on February 4, 1997. The existing license will expire on February 4, 2027.

Minarets Wilderness / Ansel Adams Wilderness Designation

At approximately the same time the project was acquired by SCE, Congress passed the Wilderness Act of 1964. The Wilderness Act was enacted:

In order to preserve and protect certain lands "in their natural condition, and thus "secure for present and future generations the benefits of wilderness." 11 U.S.C. § 1131(a) The Act recognized the value of preserving "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Id. at § 1131(c). Congress therefore directed that designated wilderness areas "shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness." Id. at 1131(a). Once designated, the areas must be managed to preserve their wilderness character.

To preserve the wilderness character, the Act describes what uses are prohibited:

*Except as specifically provided for in this Act, and subject to existing private rights, there shall be **no commercial enterprise** and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing of aircraft, no other form of mechanical transport, and **no structure** or installation within any such areas [emphasis added].*

The Wilderness Act of 1964 established the Minarets Wilderness, now known as the Ansel Adams Wilderness. As designated, Ansel Adams includes Waugh and Gem Lake within its boundary. The inclusion of these reservoirs and their associated project infrastructure were not specifically addressed, authorized, or exempted in the designation of Minarets, Ansel Adams, or any subsequent revision to the Wilderness Act. We have included the legal description for the

Ansel Adams Wilderness boundary in Attachment 1.

FERC License Post-Wilderness Act

The issuance of a new license by FERC in 1997 for the 1987 expired license is confusing considering FERC's prohibition on issuing hydropower licenses within designated Wilderness. As FERC states on its website regarding hydroelectric projects located in Wilderness:

The National Wilderness Act (16 U.S.C. §§ 1131-1136) prohibits any commercial enterprise, structure, or installation within any wilderness area. A "wilderness area" is one "where the earth and community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness areas are designated by an act of Congress. ***The Commission cannot issue a license or exemption for a project located within a designated wilderness area*** *[emphasis added] 16 U.S.C. §1133(c).*

The existence of the Ansel Adams Wilderness Area was known to FERC in 1997. The 1997 license acknowledges the Wilderness area encompassing Waugh Lake, and "prohibited new construction" within the Wilderness, however, it did not acknowledge that Gem Lake is also located within the Wilderness. Despite acknowledging the presence of wilderness intersecting the Project, the 1997 license does not cite a special provision or exemption that would allow for continued or future use of the non-conforming project features and their operation. We have searched our records seeking information that would explain this discrepancy but have not found any responsive information. Regardless of how this situation arose, presently, the Project structures inside the Ansel Adams Wilderness do not conform to the Wilderness Act, and the Forest has no mechanism to address or manage for this land management inconsistency.

Part II: Comments on Scoping Document I

- Page 1 of the transmittal letter, paragraph 3, incorrectly states that SD1 is being circulated to provide information on the Kern 3 Project, rather than Rush Creek.

- Figure 1 on page 3 of SD1 shows the Ansel Adams and Owens River Headwaters Wilderness boundaries and their relative relationship to the Project. Due to scaling, the Figure could be interpreted to suggest that the project boundary and tramway intersects the Ansel Adams Wilderness downstream of Agnew Lake. The figure should clarify that this is the result of representative scaling issues and not boundary intersections.

- On Page 10 under Water Conveyance System, SD1 states that water captured in Gem and Agnew lakes can be either conveyed via Project flowlines and penstocks to the Rush Creek Powerhouse or released into the natural stream channel from low-level outlets and/or flowline valves. From Gem Dam, water is conveyed through a 48-inch-diameter riveted-steel flowline downhill approximately 4,584 linear feet to the Agnew Junction. It is unclear based upon this description whether water conveyed from Gem Lake downstream is captured at the dam, or at some other intake structure located within the Reservoir.

- While the Water Conveyance System section describes the approximate locations and diameters of the various pipes making up the Project, it does not give the rated capacity for each flow line or penstock. This section should cite the data from SCE's PAD where this information can be found.

- On Page 12 under Powerhouse and Appurtenant Facilities, the following are described as ancillary facilities to the Rush Meadows Development: an equipment shed, gauge house, and solar facility. Similarly, for Gem Lake it describes: (3) the Gem Bunkhouse, Outhouse, and Cookhouse provide accommodations/ support facilities for personnel. It is unclear from these descriptions where these facilities are located, what if any continued use or need there is for each, their condition, and when they were put into operation or ceased being utilized.

- Page 13, under Gauging Stations: states that SCE maintains one stream gage and one reservoir gage associated with the Rush Meadows development: (1) Rush Creek below Rush Meadows (Waugh Lake) (U.S. Geological Survey [USGS] No. 10287262; SCE No. 359R) is a stream gage located approximately 160 feet downstream of Rush Meadows Dam; and (2) Waugh Lake (USGS No. 10287260; SCE No. 359) is a reservoir gage located in gage house adjacent to north abutment of dam. It is unclear based upon SCE's proposed plan to decommission Waugh Lake, and current operation ceasing impoundment at Waugh what function these gauges serve.

- Section 3.1.2 Existing Project Operation states that: The project is operated in compliance with existing regulatory requirements, agreements, and water rights to generate power. This description does not provide a discussion about the Wilderness Act issues described above.

- In Section 3.1 Under the no-action alternative, FERC states that*: the Rush Creek Project would continue to operate as required by the current project license (i.e., there would be no change to the existing environment). No new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives.* While the existing condition is a useful baseline, it should be noted more clearly in SD1 that current "operations" at Waugh impoundment have ceased, which results in an exposed reservoir footprint and transitional landscape at this site.

- Waugh lake development describes a historical operation that no longer operates in said manner.

- On Page 14, under Gem Lake Operation, FERC states that: *Storage would be maintained consistent with the July 1 through Labor Day weekend recreation requirements to the extent sufficient water was available to meet minimum stream flow requirements in Rush Creek below Gem Lake and, in low water years, a target 1410 cfs release from the powerhouse.* It is unclear from this description how the target flow of 1410 cfs is triggered, met, or how long it occurs.

- On Page 17, under 3.5.3 Project Decommissioning**,** FERC states that:

  …decommissioning is not a reasonable alternative to relicensing in most cases. Decommissioning can be accomplished in different ways depending on the project, its environment, and the particular resource. For these reasons, the Commission does not speculate about possible decommissioning measures at the time of relicensing, but rather 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. SCE does not propose decommissioning, nor does the record to date demonstrate there are serious resource concerns that cannot be mitigated if the project is relicensed; as such, there is no reason, at this time, to include decommissioning as a reasonable alternative to be evaluated and studied as part of staff's NEPA analysis. In the unlikely event that the Commission denies relicensing a project or a licensee decides to surrender an existing project, the Commission must approve a surrender "upon such conditions with respect to the disposition of such works as may be determined by the Commission." 18 C.F.R. § 6.2 (2020). This can include simply shutting down the power operations, removing all or parts of the project (including the dam), or restoring the site to its pre-project condition.

  As discussed above, multiple elements of the Project are inconsistent with the management of the Ansel Adams Wilderness, specifically, the Gem Lake dam (and project works upstream). SCE has proposed to retain Gem Dam. It is unclear whether FERC possesses a pathway to resolve Gem's operation absent congressional authorization. Therefore, we believe it is appropriate and prudent to consider all possible alternatives in FERC's environmental analysis, including decommissioning all non-conforming elements within wilderness. There are other factors besides wilderness considerations that may precipitate a full decommissioning of the Project. As

acknowledged elsewhere by SCE, seismic, economic, or other future operational considerations may significantly change utility and require reevaluation. When overlayed with SCE's proposal to otherwise decommission or discontinue operations at Waugh and Agnew, we believe these factors clearly demonstrate the need for FERC to include a full Project decommissioning as an alternative in their environmental analysis. We therefore suggest that the scope of analysis covered in Section 4.1 Resource issues include the following language where applicable for each resource section:

"Effects of continued project operation, Effects of the proposed full dam removal of Rush Meadows Dam and proposed partial dam removal modifications and decommissioning of Agnew (SCE's proposal), *and Effects of full dam removal or decommissioning of Rush, Gem, and Agnew Lakes."*

Part III: Comments on SCE's Pre-Application Document

General Comments

- While the PAD contains a proposed licensing schedule and timeline, this timeline does not factor in or address resolution of the Wilderness Act concerns through exemption or other similar action. The analysis should consider that if the current license expires, and there is no resolution beforehand, then the licensing timeline proposed in the PAD is unlikely to be realized. This should be notated in the timeline.

- The Project Alternatives section describes conceptual plans to fully or partially remove Waugh and Agnew Lake and retrofit Gem Dam. While this section describes SCE's proposal for these facilities, it does not provide sufficient engineering detail to assess all potential impacts arising from such activities, to develop site-specific mitigation measures for decommissioning impacts, or to apply for special use or other permitting purposes. This level of feasibility analysis will need to be further refined within the study process and developed into more concrete engineering and operational plans in collaboration with the respective permitting agencies. Further, the Forest Service requests the background analysis, described by SCE, that formed the basis of their proposal for evaluation purposes. Lastly, this section should include or clearly state the timelines to complete each proposed alternative action.

- The Project Alternatives section similarly does not provide sufficient detail to assess potential remediation, restoration activities, or needs resulting from decommissioning of project facilities. This information should be further developed and discussed within the study and licensing process, specifically related to habitat, visual, recreation, and cultural resource impacts.

Introduction

- Northeast of Agnew Dam, a 135-foot-long section of the 4-kilovolt power line, which connects Rush Creek Powerhouse to Agnew Dam, crosses the Owens River Headwaters. As described in our July 15, 2020 response to SCE's Agnew 4 kV Tower remediation project (Attachment 2), we believe this line is no longer is in use, and that the corresponding infrastructure was removed. The PAD should clarify the status of this feature. We found no records indicating a special provision or exemption for this transmission line segment in the Owens River Headwaters designation.

Section 2.5

- 2.5.1.4 The Rush Meadows Dam Access Trail (Project trail) extends approximately 160 feet from the Rush Creek Trail (non-Project trail) providing access to the dam and ancillary facilities adjacent to the north side of the dam. If this facility is decommissioned, then SCE should also decommission and remediate this trail segment.

- Section 2.5.1.5 Ancillary Project describes facilities associated with the Rush Meadows Development as: an Equipment shed, Gage house, Solar facility. Please describe the condition and use of each facility described here and the need for future use. 2.5.2.6. Gem Lake Dock is located near the south abutment of the dam and stores the Gem Lake Motor Barge, which is used to transport personnel and equipment across the lake.

A compressor shed and storage shed located near the south abutment of the dam along with two overhead hoist houses—one to transport materials along the dam length and another to lift the barge into the lake. Please describe the condition and use of each of the facility described here and the need for future use.

Section 2.6

- 2.6.7 Rush Meadows Dam Woody Debris Removal describes SCE's historic and current method of woody debris removal. This section states that approximately every three years or during periods when conditions are conducive, SCE flushes floating woody debris over the modified spillway downstream. It is unclear how this is accomplished now that SCE no longer impounds water behind Rush Meadows Dam. Moreover, it is unclear where this material is eventually transported to, and whether it accumulates within the Rush Creek above Gem Lake, or within Gem Lake to later be removed.

- 2.6.9 Pest management describes SCE's efforts to manage rodent populations within the interior facilities of Gem and Agnew dam and ancillary facilities. Here SCE describes the use of both traps and over-the-counter rodenticide. In a section above SCE states that they do no use herbicides on Forest Service lands, but authorization for pesticide use correspond to both herbicide and pesticides application on National Forest System (NFS) lands, including within the improvements and facilities described herein. SCE must apply for any and all pesticide use, including areas inside project facilities, if those facilities reside on NFS lands.

Section 2.7

- 2.7.1 Discusses SCE's Waugh Lake operations, which now incorporate seismic restrictions. To meet these operational constraints and its minimum flow requirement, SCE has elected to keep the low level outlets at Waugh Lake fully open since 2017. Later in this section, SCE describes USGS Gauge No. 10287262/SCE No. 395R, which measures flow for compliance purposes in Rush Creek downstream of Waugh Lake. As SCE no longer impounds water at this location, all inflow (below the 200cfs capacity of the low-level outlet pipes) is released downstream eliminating the need for this gauge. SCE should describe if there is any current or future need for this gauge, and if not, consider its removal.

Section 3.0

- 3.2.1 This section assumes that the June Lake Ski Area Parking lot will be available and permitted to serve as a base of operations for all proposed construction activities. Alternative sites should be considered and assessed in combination with the June Lake Ski Area Parking lot, and construction estimates should be recalculated in case this location is unusable or unsuitable.

- 3.2.1.1 Here, SCE describes its proposed seasonal construction base of operations, though it is unclear from the description what they consider the seasonal construction window, how many seasons will be necessary to complete any alternative, and whether SCE intends to apply for a temporary special use authorization each season, or a multi-year permit to use this space. SCE should more clearly define and refine the scope of

work, and describe whether alternative sites (including those owned by SCE) can be utilized in lieu of this space.

- 3.2.2 Describes equipment staging areas adjacent to the dams that may contain the following equipment: generators, compressors, fuel, tools, hazardous containment equipment, and other material as appropriate. For each location, specific equipment lists should be provided, especially for those areas proposed within Wilderness, so that a Minimum Requirement Analysis can be performed. All work within the Wilderness requiring the use of machinery will be subject to separate authorization and approval. This approval would also apply to activities described in sections 3.5.1 regarding Gem Dam that would occur upstream of the dam or within the Ansel Adams Wilderness boundary.

- 3.2.2 Also describes the temporary placement of construction related logistical facilities such as port-a-johns near the proposed construction areas. For all installations, both within and outside Wilderness SCE must submit a more detailed request specifying the location, duration, and operation and maintenance protocols for respective Special Use Authorization or other authorization as appropriate.

- 3.2.4.1 Regarding removal of dam facilities, this section states that the concrete foundations or pads will be broken into manageable pieces using hand tools or with the assistance of an excavator. Because construction records (if they exist) may not provide specific details regarding the extent of the facility foundations, site specific investigations or characterizations should be performed to validate or verify current estimates for excavation purposes. Construction estimates should provide for potential contingencies or be recalculated with this new information relative to baseline assumptions.

- 3.2.5 The Forest Service expects that FERC's proceeding will address all public outreach requirements under the FPA and NEPA to inform the public about SCE's proposed action and its environmental effects. Further, any public comments submitted during this proceeding pertaining to facility disposition and localized impacts to the June Lake community should be recorded and integrated into SCE's proposed action where feasible and appropriate. It is our intent to utilize FERC's NEPA analysis and Record of Decision to support all interrelated authorizations associated with SCE's proposed action that fall outside of FERC's jurisdiction.

- 3.3.3.1 (And related Sections in 3.0) Visual renderings should be created to analyze and compare aesthetic impacts for both full and partial decommissioning alternatives, See also discussion related to proposed Study Land 1.

- 3.7 In this brief segment, SCE describes the potential opportunity for Rush Creek Channel enhancement, subject to study results. It is unclear what is contemplated here, what specific study is proposed to address this opportunity, and what potential metrics would be applied. SCE should provide specific information or references for this section.

Section 5.0 Draft Study Plans

General Comments

- The Forest Service is supportive of SCE's proposed suite of 15 studies with further refinements in scope and with the addition of the LANDS 3 Study we request below.

- Regarding Lands 1 Aesthetics Technical Study, we suggest that the study objectives include the development of visual renderings for all proposed alternatives including: partially decommissioned, decommissioned, or retrofitted facilities, as well as for all construction activity areas (either temporary or seasonal) that may be visible to the public. Further, any proposed efforts to remediate or rehabilitate the landscape, should be included for analysis purposes.

- As previously mentioned, if the June Lake Ski Parking facility cannot be utilized as a base of operations, alternative locations should be discussed and analyzed as part of the study efforts.

Part IV: New Study Requests

Study Plan Request: LAND 3 - Wilderness Project Decommissioning Assessment

Criteria 1: Goals and Objectives of the study:

The goal of the study is to develop information necessary to determine the potential impacts of decommissioning Gem Lake in combination with Waugh Lake, and any other Project facilities found within the Ansel Adams Wilderness. This information will be collected to ensure that potential land use changes conform with the relevant land management direction. The PAD does not contain information to assess the decommissioning or potential removal of Gem Lake. As there is uncertainty regarding the pathway to authorize non-conforming project works in wilderness, understanding the effects of decommissioning this feature is necessary to develop and plan measures that address all potential Project outcomes.

This study would augment efforts already proposed by SCE to evaluate partial removal and decommissioning of Waugh and Agnew.

Criteria 2: Relevant Resource Management Plan Goals and Objectives:

Management direction is identified in the Wilderness Act of 1964 establishing the Minarets Wilderness (now known as Ansel Adams), all subsequent revisions to the Ansel Adams Wilderness and Owens River Headwater Wilderness, the National Forest Management Act (NFMA, public Law 94-588 1976) and the Inyo National Forest Land and Resource Management Plan (Forest Plan) that specifies forest-wide standards and guidelines, as well as area-specific guidelines.

The Rush Meadows Dam, Waugh Lake Development, and Gem Lake Dam are located within the Ansel Adams Wilderness, for which land use is managed in accordance with the Wilderness Act. All project features downstream of Gem Lake including Agnew Lake are managed under the Forest Plan. Regarding hydropower and energy development, Forest Plan direction can be found in Chapter 2, Forest wide desired conditions and management direction:

ENERGY:

Energy Uses on National Forest System lands include the extraction and potential development of geothermal and other energy sources, which are managed in a manner that protects natural resources, public health and safety, and is consistent with National Forest System land and resource management plans. Wind and solar development is limited on the Inyo National Forest. Geothermal development is limited, but facilities are located on the Inyo and serve local communities. All authorized uses to occupy and use National Forest System lands are evaluated and determined to be in the public interest. Determinations include consultation with other interested parties including Federal, State, and county agencies, Tribes, and nongovernmental interests.

Desired Condition (NRG-FW-DC) 01 Energy resources of National Forest System lands provide for the maximum public benefit that is compatible with protecting ecosystem integrity.

Criteria 3: Requestor is a resource agency

Criteria 4: Describe existing information concerning the subject of the study proposal:

Information on decommissioning certain project features is described briefly in Sections 3.0 (licensee's proposal) of the PAD and SD1. The licensee's proposal does not include a comprehensive inventory, engineering assessment, or impact analysis of a full project decommissioning scenario that includes the discontinued use or removal of the Gem Lake Dam. There is no existing information that speaks directly to the concern and subject of this study.

Criteria 5: Explain the nexus between project operations and effects on the resources to be studied:

Future use of the Project will result in the continuation of non-conformance for those structures currently residing in the Wilderness, absent an amendment to the Ansel Adams Wilderness designating legislation. Efforts to repair, operate, or otherwise manage these facilities into the future will likely require the operation of motorized equipment or mechanical transportation (such as the current use of boats) or other equipment that would be largely incompatible inside wilderness. Efforts to remove project facilities may include removal of project works, drawdown and conversion of reservoirs to other habitat, a return to an unimpaired flow regime in Rush Creek leading to Silver Lake, potential physical impacts to the land from removal efforts, visual changes to the surrounding area, impacts to public safety and cultural resources, and impacts to wilderness access and recreational opportunities during the removal effort and any subsequent rehabilitation/transitional phase.

The information collected for this study will be used to develop a Project alternative that is consistent with the Wilderness Act and will ensure the adequate protection and utilization of National Forest System lands and resources outside the Wilderness affected by the project.

Criteria 6: Explain how any proposed study methodology is consistent with generally accepted practice:

To ascertain the effects of decommissioning or removal of Gem Lake Dam and development in addition to other project facilities SCE currently proposes to remove, a combination of standard engineering methodologies, visual assessments and simulations, recreational surveys and estimates, botanical modeling, hydraulic modeling, and local public engagement should be employed. These efforts may include quantification of the existing botanical resources, quantification of public recreational use patterns, construction/deconstruction labor and equipment estimates (and subsequent Wilderness Minimum Requirements Analysis), scenery evaluations, development of a Project hydraulic model, modeling of post-removal landscape remediation efforts, and surveys of impacts to local services and the surrounding community.

These efforts are typical of the studies undertaken to analyze the potential effects of dam removal and facility decommissioning in other decommissioning proposals in California, such as the Potter Valley Project (P-77) and the Borel Project (P-382).

Criteria 7: Describe considerations of level of effort and cost:

It is difficult to calculate the cost associated with this assessment. Several variables regarding the scope of work would need to be clarified and confirmed in order to do so.

NATIONAL WILDERNESS PRESERVATION SYSTEM

MINARETS WILDERNESS

I hereby certify that the legal description and map herewith, represent the location of the boundary of the Minarets Wilderness on the Inyo and Sierra National Forests as it existed as of the date of the Wilderness Act.

4-1-65
(date)

CHAS. A. CONNAUGHTON
Regional Forester
California Region

MINARETS WILDERNESS

INYO AND SIERRA NATIINAL FORESTS

CALIFORNIA REGION

Boundary Description

Beginning at the summit of Mt. Dana 13,053 ft. elevation on the Mono County-Tuolumne County Line common to the boundary between the Inyo National Forest and Yosemite National Park the Minarets Wilderness boundary proceeds in a northerly direction about 0.5 mile down the ridge to the point where the 10,400 foot contour crosses Glacier Canyon; thence northeast 0.25 mi. up the east bank of the stream draining into an unnamed lake 0.25 mile north of Glacier Canyon in Section 29, TIN, R25E, M.D.M.; thence along the east shore of this lake to its inlet; thence northeasterly along a ridge for 0.5 mile to the knob of Dana Plateau which is 0.2 mile south of the corner common to Sections 20, 21,28,29, TIN, R25E, M.D.M.; thence north along the ridge to the 9,600 foot contour just south of Ellery Lake; thence east and north along this contour for 0.6 mile to a point 500 feet southeast of the California Electric Power Company pennstock; thence northeasterly 500 fee south of and parallel to the California Electric Power Company pennstock for 0.9 mile to the 8,000 foot contour; thence southeasterly for 3.0 miles along elevation 8,000 to point across Lee Vining Canyon from Elephant Rock in the NE¼NW¼ of Section 25, TIN,R25E,M.D.;thence south for 0.6 mile to the 9,200 foot contour; thence in a southeasterly direction for 1.5 miles at elevation 9,200 feet to the ridge south of Gibbs Canyon and down to the point labeled 9,182 feet; thence directly south for 0.2 mile to the 8,800 foot contour; thence southwesterly at elevation 8,800 feet for 3 miles to the point 0.6 mile west of the inlet to Walker Lake; thence southeasterly 0.35 mile to the point where the 8,000 contour crosses Walker Creek; thence directly south for 0.3 mile to elevation 8,800 ft.; thence southeasterly for 1.8 miles at elevation 8,800 feet to a point on the ridge in the NW¼ of Section 19,TIS,R26E, M.D.M.;thence southeasterly for 0.4 mile down the ridge to the crest of the principal ridge just north of Parker Creek; thence northeasterly for 0.7 mile down the Parker Creek Ridge to the point where the 7,920 foot contour crosses Parker Creek;thence southwesterly for 2.7 miles up the ridge south of and parallel to Parker Creek to elevation 10,400 feet, the point of the northern spur of Mt. Wood; thence easterly for 0.6 mile to elevation 9,600 feet; thence southerly along the 9,600 foot contour for 2.5 miles to the ridge in the SE¼ of Section 7, T2S,R26E,M.D.M., 0.25 mile north of Alger Creek; thence southeasterly for 0.5 mile down the ridge to the point where the 8,000 foot contour crosses Alger Creek; thence southwesterly for 0.6 mile up the ridge south of Alger Creek to elevation 10,080 feet; thence along this contour in a southerly direction for 0.25 mile; thence southeasterly for 0.6 mile down the ridge to the point where the 8,720 foot contour crosses Tatum Hole Creek; thence southerly to a summit elevation 9,520 feet; thence southwesterly for 0.4 mile to the knoll west of Agnew Lake; thence southerly down the ridge between Gem Lake and Agnew Lake for 0.4 mile to the Gem Lake Dam; thence across the dam; thence southeasterly along the ridge south of Gem Dam for

about 0.2 mile to the 9,360 foot contour; thence southeasterly along the 9,360 foot contour for about 1.7 miles to the main spur ridge that lies 0.50 mile northwest of Fern Lake; thence northerly down said ridge for about 0.3 miles to the 8,800 foot contour; thence southeasterly along said 8,800 foot contour across Fern Creek for about 0.6 mile to the main ridge east of Fern Lake; thence southerly up said ridge for about 2.5 miles to the summit of San Joaquin Mt.; thence southeasterly along the main divide between Deadman Creek and the San Joaquin River for about 0.50 mile to Two Teats Mt.; thence on a straight line southwesterly for about 1.5 miles to the junction of Shadow Creek and the Middle Fork of the San Joaquin River; thence southwesterly 0.4 mile up the ridge to elevation 9,520 feet immediately north of Rosalie Lake; thence southeasterly 2.2 miles down the crest of the ridge passing to the east of Gladys Lake and north of Trinity Lakes to elevation 9,368 feet; thence southeasterly 0.6 mile to the knob elevation 8,800 feet which is 0.7 mile west of Starkweather Lake; thence southwesterly 0.6 mile to the knob elevation 9,247 feet; thence southwesterly down the ridge between Minaret Creek and the Middle Fork San Joaquin River for 0.75 miles to the point on Minaret Creek 0.3 mile below Johnston Lake; thence southerly 0.5 mile to the 8,400 foot contour; thence southerly and westerly for 2.4 miles along the 8,400 foot contour to the east fork of King Creek; thence down said fork to junction with main King Creek and down King Creek to junction with creek draining Fern Lake; thence 0.15 mile up the creek draining Fern Lake; thence southwesterly for 0.4 mile to the boundary between Inyo and Sierra National Forests; thence southwesterly 1.45 miles along the Forest boundary which is the main divide between King Creek and Cargyle Creek to the knoll labeled 10,821 feet; thence northerly 0.95 mile to the intersection of the 9,600 foot contour with the stream that feeds Ashley Lake; thence westerly up the north bank of the stream to the main divide between King Creek and Iron Creek on the boundary between Inyo National Forest and Sierra National Forest; thence northerly 0.3 mile on said Forest boundary to peak with elevation 10,907 feet; thence westerly along the divide between the two forks of Iron Creek to their confluence; thence down Iron Creek 0.8 mile to the 8,000 foot contour; thence northerly 2.3 miles along the 8,000 foot contour to a point due east of Hemlock Crossing; thence due west 0.4 mile to the 8,000 foot contour on the west side of the North Fork of the San Joaquin River; thence southerly approximately 5 miles along the 8,000 foot contour to Cora Creek; thence southwesterly 0.6 miles to point on East Fork Granite Creek where Isberg Trail crosses; thence southwesterly for 0.4 mile to the knob at elevation 8,522 feet; thence northwesterly for 1.25 miles up the southeast spur of Timber Knob (elevation 9,945') to the 9,200 foot contour; thence southwesterly for 0.75 mile along said 9,200 foot contour to a point on ridge on South Flank of Timber Knob; thence southerly for 0.5 mile down the ridge to elevation 8,819 feet; thence southwesterly for 0.9 mile to the junction of Madera Creek and the West Fork of Granite Creek; thence southwesterly for 3.5 miles along the ridge dividing Jackass Creek and Madera Creek to elevation 9,852 feet; thence westerly for 1 mile along same divide to Madera Peak elevation 10,509 feet; thence northwesterly for 1.4 miles along main divide between Chiquita Creek and Madera Creek to Sing Peak elevation 10,552 feet; thence

northerly along the boundary common to the Sierra National Forest and Yosemite National Park for approximately 18.5 miles through Triple Divide Peak, Isberg Peak, Foerster Peak, and Electra Peak to the junction of the boundaries of Tuolumne, Mono and Madera counties; continuing along the common boundary between the Sierra Forest and Yosemite Park through Donohue Peak, Mono Pass and Mt. Gibbs for approximately 17.0 miles to the point of beginning at Mt. Dana.

The above description is as shown on the 1 inch equals--1 mile map which is attached to and made a part of this description.

Containing approximately 109,559 1/ acres.

1/ Gross acres of all ownerships within boundary.

USDA United States Department of Agriculture | Forest Service | Inyo National Forest | 351 Pacu Lane, Suite 200 Bishop, CA 93514

File Code: 2770
Date: July 15, 2020

Wayne Allen
Principal Manager
Southern California Edison
1515 Walnut Grove Ave.
Rosemead, CA 91770

Dear Mr. Allen:

Thank you for providing the Project Description and 4(e) Compliance Plan for the Agnew 4kV Tower Remediation project, located within the boundaries of the Rush Creek Federal Energy Regulatory Commission (FERC) project License#1389.

In the summer of 2019, the upper portion of the Agnew 4kV circuit was de-energized above the Agnew Lake Dam to mitigate possible fire hazards posed by the line that were uncovered during an inspection. After this line was de-energized, with Forest Service and FERC approval, a solar/battery system and backup generation were installed below Gem Lake Dam to provide immediate power for the critical dam safety equipment. Since then, Southern California Edison (SCE) has conducted additional analysis of the line, and has determined that two towers require immediate removal. In addition to the removal of the two lattice towers, SCE will also remove the associated conductor wire between the two towers, and install and/or repair guy wires to provide necessary support of existing towers.

This project is estimated to start in mid-August and take seven to ten days to complete. It will involve use of helicopters, with an estimated 10 flights required. It will be taking place at the same time as the Gem Lake Valve Replacement Project, which the Forest Service has already provided concurrence. Since the valve replacement project will also require helicopter use, and use of the June Mountain parking lot, the staging of helicopters for the Agnew 4kV Tower Remediation project will be included in the special use authorization that will be issued for the use of the June Mountain Parking Lot.

The Compliance Plan provided all of the necessary information to allow the Forest Service to provide concurrence on the Forest Service 4(e) conditions found in the license.

Condition No. 6, Cultural Resources Management: *This condition required that a Cultural Resource Management Plan (CRMP) be developed. The CRMP states that future consultation should be untaken for new discovered resources in the project area of potential effects, newly planned project activities, or newly discovered effects on NRHP eligible properties in the area of potential effects.*

The entire Agnew 4kV line has been surveyed for cultural resources in 2006 (Jackson 2006) and again in 2010 (Switalski and Bardsley 2010) to address additional lay down and staging areas for SCE's proposed rebuild of the existing Agnew 4kV transmission line from Gem Lake to the Rush Creek powerhouse, increasing the capacity of the line to 12 kV. The 2006 survey found two historic refuse deposits (CA-MNO-4157 and -4158) which date to the period of construction of the Rush Creek Project.

These resources plus the entire Agnew 4kV line were evaluated for the National Register of Historic Places and determined not eligible for listing (State Historic Preservation Office (concurrence dated February 8, 2011). I agree with SCE's assertion that there are no historic properties located within the Area of Potential Effects and the proposed Project will have no effect to Historic Properties per § 800.4 of the National Historic Preservation Act under SCE's Management Plan for the Historic and Archaeological Resources Associated with the Rush Creek Hydroelectric Project (White 1990).

The Avoidance and Minimization Measures contained in the Compliance Plan demonstrates compliance with Condition 9 (Hazardous Substances Plan), Condition 10 (Erosion Control Plan), and Condition 11 (Spoils Disposal). Since SCE will be removing existing towers, and using the same material/color for the guy wires, this project will be consistent with Condition #12, Visual Resource Management. Lastly, the Biological Resources Technical Report provided as Appendix E of the Compliance Report satisfies Condition 11 (Protection of T&E Species).

As with the Gem Lake Valve Replacement project, a Construction Plan must be completed and signed by SCE and the Forest Service prior to the commencement of construction. Any questions or concerns can be directed to Sheila Irons, Inyo National FERC Coordinator, at sheila.irons@usda.gov.

Sincerely,

JOHN F. "PANCHO" SMITH
Forest Supervisor

cc: Gordon Martin, Matthew Woodhall

California Department of Fish and Wildlife

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 14, 2022

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
Division of Hydropower Licensing
888 First Street NE
Washington, DC 20426

Subject: Comments from the California Department of Fish and Wildlife on Southern California Edison's Pre-Application Document, Scoping Document 1, and Study Plans for the Relicensing of the Rush Creek Hydroelectric Project, FERC Project No. 1389-059

Dear Ms. Bose,

The California Department of Fish and Wildlife (CDFW) has received and reviewed the pre-application document (PAD) and Study Plans filed by Southern California Edison (SCE) and the Scoping Document 1 filed by the Federal Energy Regulatory Commission (FERC) for the relicensing of the Rush Creek Hydroelectric Project (Project, FERC No. 1389). The PAD and Study Plans were filed by the Licensee, SCE, with FERC on January 31, 2022, and the Scoping Document 1 was filed by FERC on February 14, 2022. Pursuant to 18 CFR §5.9, CDFW is providing comments on the PAD, Study Plans and Scoping Document 1.

AUTHORITIES

CDFW is the relevant State fish and wildlife agency for resource consultation pursuant to the Federal Power Act Section 10(j) (16 U.S.C. section 803 (j)). The fish and wildlife resources of the State of California are held in trust for the people of the State by and through the Department (Fish & G. Code § 711.7). CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (Fish & G. Code § 1802). Information generated through the appropriate studies will be utilized by CDFW in the development of recommendations.

The mission of CDFW is to manage California's diverse fish, wildlife, and plant resources, and the habitats on which they depend, for their ecological values and for their use and enjoyment by the public. It is the goal of the Department to preserve, protect, and as needed, to restore habitat necessary to support native fish, wildlife, and plant species within the FERC-designated boundaries of the Project, as well as the areas adjacent to the Project in which resources are affected by ongoing Project operations, maintenance, and recreational activities.

SCOPING DOCUMENT 1

3.2.2 Proposed Environmental Measures

CDFW Comment: At this time SCE has not proposed any new environmental measures. SCE is proposing to decommission two dams within the FERC Project boundary and the decommissioning work could last for approximately ten years. The Project is located in wilderness areas as well as Forest Service land that provide important habitat for fish and wildlife resources, including special-status species. Although uncertain at this time, the Project implementation may result in substantial disturbance to the natural environment, including fish and wildlife resources, due to increased human presence, noise, vibrations, air traffic, dust and light. Therefore, CDFW recommends that SCE propose and implement environmental measures to avoid, minimize and mitigate Project impacts to fish and wildlife resources.

PRE-APPLICATION DOCUMENT & STUDY PLANS

Appendix C – Draft Technical Study Plans

TERR -2 Wildlife Resources

CDFW Comment: CDFW is concerned with the proposed aerial raptor survey methodologies, timing and buffer distances from raptor nests, and has discussed these concerns with SCE during Technical Working Group (TWG) meetings. CDFW has proposed researching the potential to use drones instead of helicopters for aerial raptor surveys. SCE provided an Updated Wildlife Resources Technical Study Plan (see attachment 1) to the TWG members on April 5, 2022, via email, that included the option to conduct surveys for nesting raptors via helicopter or drone, which CDFW appreciates. After internal review, CDFW has the following recommendations for conducting the proposed aerial raptor surveys:

- Helicopter or Drone Surveys
    - CDFW recommends the TERR 2 General Wildlife Study Plan include specific avoidance and minimization measures that will be implemented during either drone or helicopter aerial surveys of raptor nests. Specifically, CDFW recommends including temperature and weather requirements for flights to ensure that if adults are flushed from the nest, eggs and nestlings are not chilled during their exposure. Additionally, CDFW recommends that a specific distance and speed limitation be identified and maintained to reduce the disturbance to the nest(s) and

adults. SCE is responsible for ensuring that Project and study related activities do not result in the violation of Fish and Game code section 3503, 350.5 and 3511

- Drone operators, helicopter pilots and biological surveyors should all be aware of potential raptor disturbance behavior and should have a determined and communicated plan for when to abort flights. Additionally, the biological surveyor should know what data to collect if a disturbance happens. If disturbance happens, the flight should be immediately aborted. The situation should be reviewed and discussed with CDFW to determine how and if a return flight should occur.

- Helicopter Surveys

  - CDFW recommends that when surveying with helicopters, SCE should, in coordination with CDFW and USFWS, develop buffer distances between helicopter flight path and raptor nests.

  - CDFW recommends that a maximum time that the helicopter can hover by a nest be determined, in coordination with CDFW and USFWS, and if the surveyor has not identified the necessary data within that time, the pilot should continue on the determined flight path.

- Drone Surveys

  - If surveying with a drone, the drone should be equipped with rotor guards to protect raptors from injury if they decide to attack the drone.

  - Though data on drone impacts to raptors is largely lacking, some nesting raptors will be responsive to disturbance caused by drone flights. CDFW's recommended buffer distance be developed in coordination with CDFW. Buffer distances may vary depending on several factors, such as variable noise signatures on drone types, line of site from drone to known or suspected nest, nesting chronology, species, acclimation of pair to disturbance, and boarding habitat. Each site and situation will have its own considerations that may result in more or less conservative buffer distances.

  - Drone operators should be aware of nesting raptors and raptor disturbance behaviors when flying, and cease flights if disturbance occurs in addition to conferring with CDFW on how to continue future flights.

CDFW Comment: CDFW understands and appreciates that the proposed aerial survey methodology will continue to be developed in consultation with the Terrestrial TWG. CDFW requests that the language at the bottom of page TERR 2-4 of the Updated Draft Study Plan (submitted on April 5 via email to the TWG members) be amended to state, "*The specific aerial survey methodology to be implemented will be developed in consultation with the Terrestrial TWG, and approved by the participating regulatory agencies including, United States Fish and Wildlife Service, United States Forest Service, CDFW and the State Waterboard*".

CDFW comment: CDFW requests SCE consider helicopter impacts to other terrestrial species including Sierra bighorn sheep and mule deer.

Sierra Nevada Bighorn Sheep & Helicopter Flight Paths

CDFW Comment: The Project may require the use of helicopters for an approximately 10-year timeline to conduct decommissioning activities, restoration activities, implementation of technical study plans and retrofitting of Gem Dam. Sierra Nevada bighorn sheep (SNBS) are not currently known to use the FERC Project area, but they are present in the immediate vicinity (see Figure 1). SNBS lambing season is January 1 through June 30 and if helicopter flights are planned during this time, impacts to SNBS should be evaluated. The utilization of the current flight paths shown in Map 3-1 of the PAD are unlikely to impact SNBS if the helicopters stay close to the proposed flight paths. However, because the helicopter flight paths would be flown several thousand times (Table 3-4, Table 3-7, Table 3-11 of the PAD) over an approximately 10-year period (Figure 3-1 of PAD), it will be important to occasionally reassess the impacts to SNBS during that 10-year timeline, especially if flight paths change. SCE should coordinate with CDFW regularly on any updates to SNBS occurrences in the area.

General Study Plan comments

CDFW Comment: CDFW has been participating regularly in the SCE scheduled TWG meetings for the past several months. Specifically, CDFW has been regularly involved in the following TWG:

- AQ 1 & 5 Instream Flow & Geomorphology
- AQ 2 Hydrology
- AQ 3 & 4 Water Temperature and Water Quality
- AQ 6 & 7 Fish Population and Barriers & Special-Status Amphibians
- TERR 1 & 2 Botanical & Wildlife

CDFW has provided comments in writing and verbally during the SCE scheduled TWG meetings and SCE has incorporated these comments into revised technical study plans. Besides the comments provided below, CDFW does not have any

further comments on the Study Plans at this time and appreciates SCE's coordination with the TWG members.

CONCLUSION

CDFW appreciates the opportunity to comment on the PAD filed by SCE and the Scoping Document 1 filed by FERC for the relicensing of the Rush Creek Hydroelectric Project. CDFW looks forward to further discussions with the TWG members.

If you have any question pertaining to this letter, please contact Alyssa Marquez, at (760) 567-0332 or Alyssa.Marquez@Wildlife.ca.gov

Sincerely,

Patricia A. Moyer

Trisha Moyer, Habitat Conservation Program Supervisor

cc: Alisa Ellsworth, CDFW
Alyssa Marquez, CDFW
Brandy Wood, CDFW

Ecc: Technical Working Group Members

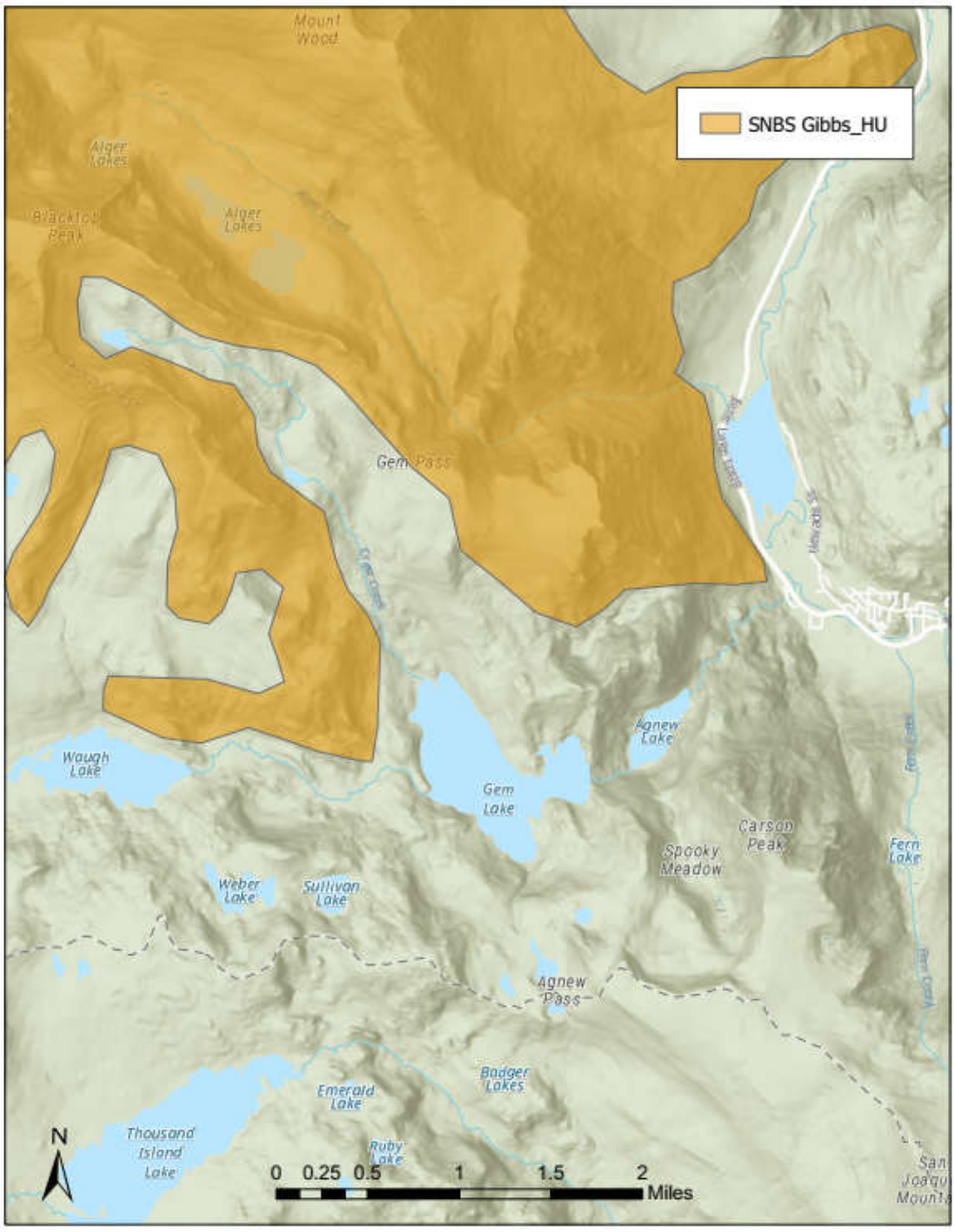

Figure 1. Map showing the distribution of the Sierra Nevada Bighorn Sheep within the Gibbs Habitat Unit. Alger Lakes and Blacktop Peak (Northwest corner of map) are areas know to be utilized by Sierra Nevada Bighorn Sheep.

Attachment 1

UPDATED DRAFT
TERR 2 – WILDLIFE RESOURCES
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

April 2022

UPDATED DRAFT TECHNICAL STUDY PLAN
TERR 2 – Wildlife Resources

POTENTIAL RESOURCE ISSUES

- Special-status wildlife species and their habitats.

PROJECT NEXUS

- Direct loss or degradation of wildlife habitats.
- Disturbance or direct loss of special-status wildlife species.

RELEVANT INFORMATION

The following information is available regarding wildlife resources in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.6 for a summary of wildlife resource information [SCE 2021]):

- Wildlife habitats and common wildlife species present within 1 mile of the Federal Energy Regulatory Commission (FERC) Project boundary based on a crosswalk from U.S. Forest Service's (Forest Service) Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) alliances (Forest Service 2009) to California Department of Fish and Wildlife's (CDFW) California Wildlife Habitat Relationship (CWHR) wildlife habitats (CDFW 2020a).
- Known occurrences of special-status wildlife in the vicinity of the Project based on the CDFW California Natural Diversity Database (CNDDB) (CDFW 2020b); CDFW list of species considered California Fully Protected under the California Fish and Game Code (CDFW 2020c); CDFW Sierra Nevada Bighorn Sheep Recovery Program Annual Reports (CDFW 2015, 2018); Forest Service Pacific Southwest Region 5 Inyo National Forest (INF) species of conservation concern list (Forest Service 2019); U.S. Fish and Wildlife Service (USFWS) Sierra Nevada Bighorn Sheep Recovery Plan (USFWS 2007).
- Special-status wildlife species potentially occurring within CWHR designations based on *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).
- Critical Habitat present in the vicinity of the Project for Sierra Nevada Bighorn Sheep (USFWS 2008).
- Location of Project facilities, including transmission lines and power lines.
- Supplemental information (e.g., habitat descriptions and special-status species occurrences) obtained from a review of the following Project-specific sources:
    - FERC's Environmental Assessment, Rush Creek Project (FERC Project No. 1389) (FERC 1992);

- SCE's Survey Report for Phase I and Phase II Projects (SCE 2017, 2018a); and
- SCE's Survey Report for Gem Dam Value Upgrade (SCE 2020).

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, along helicopter flight paths, and within the potential enhancement area.[1]
- Information on Sierra Nevada bighorn sheep distribution and use of the FERC Project boundary and adjacent Critical Habitat areas.
- Data on Project transmission line pole and power line pole configurations to determine if they are consistent with guidelines for avoidance of avian mortalities.
- Information on the location of bat roost in Project facilities.

STUDY OBJECTIVES

- Update CWHR habitats within 1 mile of the FERC Project boundary based on CALVEG vegetation alliances developed as part of the TERR 1 – Botanical Resources Technical Study Plan (TSP).
- Update information on special-status wildlife species potentially occurring in CWHR habitats within 1 mile of the FERC Project boundary.
- Consult with resource agencies to determine Sierra Nevada bighorn sheep distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.
- Conduct wildlife reconnaissance survey to characterize wildlife use within the FERC Project boundary[2] and within the potential enhancement area.
- Document raptor nests along the proposed helicopter flight paths.
- Determine whether Project transmission line and power line pole configurations are consistent with guidelines for the avoidance of avian mortalities.

[1] The potential enhancement area includes portions of the Rush Creek and South Rush Creek channels upstream and downstream of the State Route 158 crossing. The purpose of the potential enhancement is to address local flooding of residences during high-flow events. Refer to Map TERR 2-1 and PAD Map 3-5.

[2] Wildlife reconnaissance surveys along the Project-affected streams will only be conducted within stream segments defined in Table TERR 1-1 of the TERR 1 TSP.

- Document the presence of bat roosts at Project facilities.

- Proposed studies (objectives) for special-status amphibians are provided in AQ 7 – Special-Status Amphibians TSP. The Project is outside the range of any special-status reptiles.

EXTENT OF STUDY AREA

- Refer to Map TERR 2-1 for the wildlife resources study area. The study area for:

  - Updating CWHR habitat and special-status wildlife species occurrence includes lands within 1 mile of the FERC Project boundary.

  - Sierra Nevada bighorn sheep distribution and use of lands includes lands within the FERC Project boundary and adjacent Critical Habitat.

  - Wildlife reconnaissance survey includes lands within the FERC Project boundary[3] and within the potential enhancement area.

  - Documentation of raptor nests extends 300 feet on either side of the proposed helicopter flight paths.

  - Evaluation of potential avian mortality includes Project transmission lines and power lines.

  - Bat surveys include Project facilities with the potential to support roost sites.

- 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

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 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). Special-status wildlife designated by INF as Forest Species of Conservation Concern (FSCC) are also included.

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

[3] Wildlife reconnaissance surveys along the Project-affected streams will only be documented within stream segments as defined in Table TERR 1-1 of the TERR 1 TSP.

The study approach for special-status wildlife surveys, evaluation of Project transmission line tower and power line pole configurations, and special-status bat surveys is provided below.

SPECIAL-STATUS WILDLIFE

- Cross-reference CALVEG vegetation alliances identified as part of the TERR 1 – Botanical Resources TSP 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 CALVEG–CWHR Crosswalk table.

- Develop an updated Geographic Information System (GIS) map of wildlife habitats and overlay information on Project facilities, construction areas, restoration areas, and the potential enhancement area.

- Consult with resource agencies to obtain information on Sierra Nevada bighorn sheep distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.

- Conduct wildlife reconnaissance survey 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 the CDFW's Special Animals List and cross-referenced with SCE's Master Species List (CDFW 2021; SCE 2018b).

    - For each special-status species observed, a CNDDB field survey form will be completed and submitted to CDFW.

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

- Conduct an aerial survey (i.e., helicopter or drone) during the nesting season to document raptor nests within 300 feet on either side of the proposed helicopter flights paths. The specific aerial survey to be implemented and survey methodology will be developed in consultation with the Terrestrial TWG.

  - Surveys will be conducted July–September, outside the critical sensitive period (incubation and early hatching period) for special-status raptors potentially occurring within the study area.

  - Surveys will be conducted by a qualified biologist with experience in conducting aerial nest surveys. If a nest is identified, the species and nest status will be determined (in the minimal time necessary). If a raptor shows sign of agitation, the nest site will be documented, and the helicopter/drone will immediately leave the vicinity of the nest.

- Collect and summarize incidental observations of any special-status species during all field surveys completed in support of the relicensing of the Rush Creek Project.

- Develop an updated list of special-status wildlife species potentially occurring in CWHR habitats.

EVALUATION OF PROJECT TRANSMISSION LINE AND POWER LINE POLE CONFIGURATIONS

- Document the configuration of transmission line and power line 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 transmission lines and power lines 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.

SPECIAL-STATUS BATS

Identify Facilities Potentially Supporting Bat Roosts

- 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 Section 2.0 of the PAD (SCE 2021)

- Conduct a preliminary visual 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.

Conduct Roost Survey

Visual Roost Survey

- Conduct a visual roost survey at Project facilities identified as potentially supporting roosting bats. The assessment will be conducted (July–September) during the end of 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 sign (e.g., skeletons, dead young, placentas, guano deposits, urine staining, and culled insect parts) and/or live bats. Special-status bat species potentially occurring in the study area are easily visually identifiable. If live bats are observed, biologists will enter to only photograph the roost. The species present, roost status (day roost/maternal), and number of adults and/or juveniles will be determined from review of the photograph.

- If live bats are not observed, but bat roost sign is present, spotlights and high-powered flashlights will be used in combination with binoculars for more detailed examination of the potential roost sites.

- To prevent the introduction of *Pseudogymnoascus destructans*, a fungal pathogen causing the emerging white-nose syndrome responsible for widespread mortality in North American bats, methods described in the National White-nose Syndrome Decontamination Protocol (White-nose Syndrome Response Team 2018) will be implemented to decontaminate clothing and equipment prior to entering potential roosts.

- A map and table will be developed documenting the location of bat roosts and species present, if applicable.

- If bat roosts are present but the species cannot be determined visually, then species will be determined using guano DNA sampling (if suitable fresh guano is available). Specific methods for guano DNA sampling are provided below.

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 map and table will be developed identifying the location of guano DNA sampling and species present, if applicable.

REPORTING

- Study methods and results will be documented in a TERR 2 – Wildlife Technical Study Report (TSR). The TSR 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
January–April 2023	Consult with resource agencies to obtain information on Sierra Nevada bighorn sheep
June–September 2023	Conduct wildlife reconnaissance surveys, raptor nest surveys, and transmission line/power line pole evaluation
July–September 2023	Conduct bat surveys
October 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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MAPS

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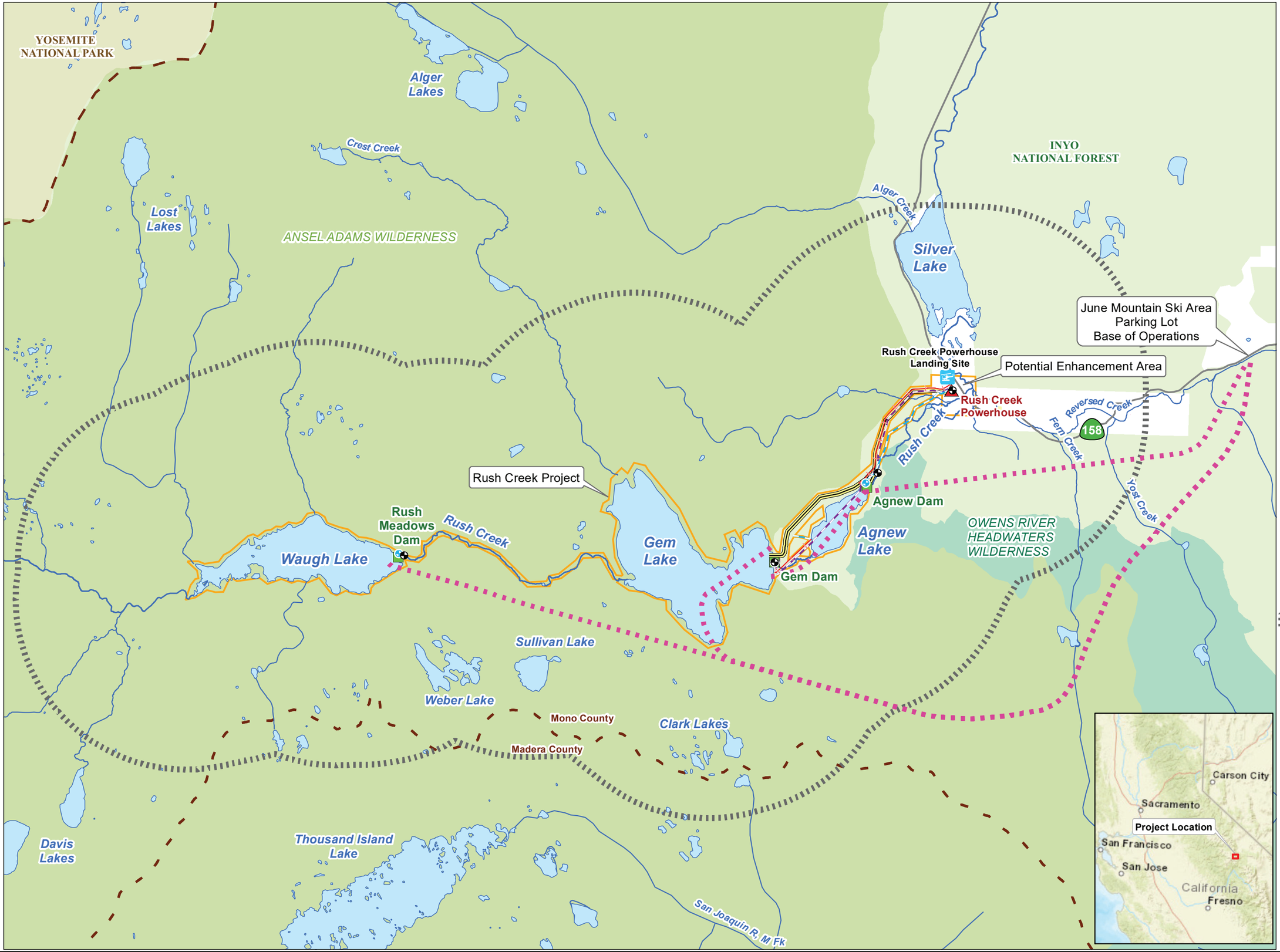

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Stream Gage
- Reservoir Gage
- Helicopter Landing Site
- Power Line
- Communication Line
- Tramway
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary
- Approximate Helicopter Flight Path

Land Jurisdiction and National Wilderness Areas/Parks*

- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

TERR-2 Study

- TERR-2 Study Area (1-Mile Buffer of FERC Boundary)

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Rush Creek Project (FERC 1389)

TERR 2-1

Study Area

0 1,250 2,500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 9/10/2021

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Friends of the Inyo

April 15, 2022

Via Electronic Filing

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

Re: Rush Creek Hydroelectric Project (P-1389-059) – Comments on Scoping Document 1 and Pre-application Document

Friends of the Inyo, on behalf of our nearly 1,000 members, submits these comments in response to Scoping Document 1 and the Pre-Application Document (PAD) for the Rush Creek Hydroelectric Project, including Technical Study Plans. Friends of the Inyo (FOI) is a grassroots non-profit organization based in Bishop, California. Our mission is to ensure the public lands of the Eastern Sierra exist in an intact, healthy natural state for people and wildlife through preservation, stewardship, exploration, and education. Over our 30-year history, FOI has actively engaged with land and water management agencies in the Eastern Sierra, including the National Forest Service (NFS) and the project applicant, Southern California Edison (SCE).

I. Comments on Scoping Document 1

A. Project Decommissioning Alternative

FOI believes that a full project decommissioning alternative should be included in a revised scoping document and studied in detail. There are serious resource concerns related to the project's existence that cannot be addressed with appropriate license measures and that make decommissioning a reasonable alternative. Namely, a large portion of the project is located in a congressionally designated wilderness area, the Ansel Adams Wilderness, which was established after the project was constructed. The project facilities significantly impair

wilderness characteristics such as unspoiled views and access to the flowing waters of Rush Creek. Under the language of the Wilderness Act, there may not be a legal basis for relicensing and continued operation of the project within the wilderness boundary. The project is a non-conforming use, and the Forest Service does not appear to have authorization to approve an ongoing wilderness exemption for the project. (See *High Sierra Hikers Assn. v. U.S. Forest Service*, E.D. Cal. Case No. 1:05-cv-00496-AWI-DLB, Memorandum Opinion dated June 8, 2006; and the Wilderness Act, 16 U.S.C. § 1133(c) ("there shall be no … structure or installation within any such area.")

SCE already proposes to remove two of the three dams that make up the project, Rush Meadows and Agnew Dams. It also proposes to lower and retrofit the remaining dam, Gem Dam, which lies within the Ansel Adams Wilderness Area. Given these facts, a full decommissioning alternative is reasonable and prudent here. Indeed, without a closer look at the effects of also decommissioning Gem Dam, there is a strong risk that impacts related to lakebed exposure, downstream flood control, materials hauling, recreation and other resources could be neglected or left unmitigated.

II. Comments on PAD and Associated Technical Study Plans

A. Survey Technique for Nesting Raptors

The draft TERR 2 – Wildlife Resources Technical Study Plan indicates that SCE proposes to conduct aerial surveys for nesting raptors, using a helicopter or drone. FOI is opposed to the use of helicopters or drones for raptor surveys due to the likelihood of disturbance of sensitive species including nesting birds. This is particularly true in the Ansel Adams Wilderness Area where drones should not be used.[1] The proposal to conduct aerial surveys should be removed.

[1] See U.S. Forest Service, *Drone (Unmanned Aircraft Systems) Use on National Forest Lands & the Protection of Wildlife, available at*: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd493612.pdf

B. Visual Impacts to Wilderness

The draft Land 1 – Aesthetics Technical Study Plan indicates that SCE will study "the existing scenic integrity (ESI) of the Project facilities on NFS land compared to surrounding landscape conditions and scenic integrity objectives (SIO) established by the INF." In addition to any scenic integrity objectives established by the NFS, however, the study should also compare the scenic integrity of the project facilities with the congressional objectives of the Wilderness Act. These objectives are that wilderness areas shall be administered to "leave them unimpaired for future use and enjoyment as wilderness," and for "the preservation of their wilderness character." 16 U.S. C. 1131(a). Wilderness character stands "in contrast with those areas where man and his own works dominate the landscape." 16 U.S. C. 1131(c). A wilderness is an "area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." *Id*. It is "undeveloped Federal land retaining its primeval character and influence, without permanent improvements," which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." *Id*.

Because it is uncommon to relicense a hydropower facility in a wilderness area, SCE must take these statutory SOIs into account when conducting its study of aesthetic impacts. The project should be undertaken so as to reduce the visual impacts of the project facilities (decommissioned or not) and exposed lakebeds. This should be included in a revised scoping document and/or the PAD.

II. Information Requests

A. Power Grid Reliability

FOI requests more information related to the effects of the proposed hydropower operations at Gem Dam on the resiliency and reliability of the local and regional electricity grid. This information is relevant to the project proposal, and because SCE is an electric power purveyor in the region, the information should be in SCE's possession or easily obtained with the exercise of due diligence.

Specifically, FOI wishes to better understand the role that the project's continued power generation would or would not play in maintaining electricity to the community of June Lake in the event of an emergency, such as a wildfire or other short-term condition that causes a regional power outage.

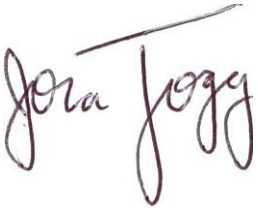
B. Lakebed Reclamation and Restoration

FOI requests more information regarding the methods and materials that SCE could employ to reclaim and restore the natural character of the dry lakebeds resulting from full or partial decommissioning of the project dams. Specifically, FOI requests a copy of SCE's proposed reclamation/remediation/restoration plan for Waugh Lake, Gem Lake, and Agnew Lake. The lakebeds will undergo desiccation as a result of the lowering and removal of the Rush, Gem, and Agnew Dams. This will lead to dusty conditions that could impair the quality of air, water, and snow in the Eastern Sierra. Adverse biological impacts to species along Rush Creek are also anticipated.

Also, in addition to causing visual impacts, the lowering of lake levels without remediation will adversely affect wilderness camping availability and water access for recreation. The existing lakes created by the project present some of the only camping sites on the first nine miles of trail beginning from the Rush Creek trailhead. There are only a handful of level camping sites with tree cover for backpackers to find shade, water, and rest. Active restoration of the lakebeds should be a critical project component to avoid significant impacts on biological resources, air, water, and snow quality, aesthetics, recreation, and public health and safety. The requested information about lakebed restoration and remediation should be included in a revised scoping document.

Thank you for the opportunity to comment on Scoping Document 1 and the Pre-Application Document (PAD) for the relicensing of the Rush Creek Hydroelectric Project. We look forward to continued engagement in this licensing proceeding.

Sincerely,



Jora Fogg, Policy Director
Friends of the Inyo
621 W Line St., Suite 201
Bishop, CA 93514
(760) 873-6500
jora@friendsoftheinyo.org

Document Content(s)

State Water Resources Control Board

Certificate of Service

I hereby certify that I have this day filed electronically with the Federal Energy Regulatory Commission and served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 4th day of April 2022.

_Dayne Kendrick____
Dayne Kendrick
Engineering Geologist
Division of Water Rights
State Water Resources Control Board
Dayne.Kendrick@waterboards.ca.gov

April 15, 2022

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

Pre-Application Document Comments
Rush Creek Hydroelectric Project
Federal Energy Regulatory Commission Project No. 1389
Mono County
Rush Creek, Waugh Lake, Gem Lake, and Agnew Lake

Dear Mr. Allen and Secretary Bose:

Southern California Edison (SCE) owns and operates the Rush Creek Hydroelectric Project (Project), also referred to as Federal Energy Regulatory Commission (FERC) Project No. 1389. On December 16, 2021, SCE filed its Pre-Application Document (PAD) with FERC for relicensing of the Project. On January 20, 2022, State Water Board staff attended a virtual public meeting hosted by SCE to discuss the Project relicensing and information contained in the PAD. On February 14, 2022, the Commission issued a Notice of Intent to File License Application for a New License and Commencing Pre-filing Process for the Project. The public notice began a 60-day comment period in which interested parties could submit comments on the Project's PAD and request additional studies.

State Water Board staff hereby submits the enclosed comments pertaining to the Project. The comments are provided in *Attachment A: Comments on Pre-Application Document for Rush Creek Hydroelectric Project.*

The State Water Board's study plan request discusses the six criteria specified by FERC in the Code of Federal Regulations, title 18, section 4.38(b)(5).

If you have questions regarding this letter, please contact Dayne Kendrick, Project Manager, by email at dayne.kendrick@waterboards.ca.gov. Written correspondence should be directed to:

Wayne Allen
Secretary Bose

April 15, 2022

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

Sincerely,

Dayne Kendrick – Engineering Geologist
Water Quality Certification Program
Division of Water Rights

Attachment A: Comments on Pre-Application Document for Rush Creek Hydroelectric Project

Wayne Allen
Secretary Bose

April 15, 2022

ec:

Matthew Woodhall
Project Lead
Southern California Edison
Matthew.woodhall@sce.com

Alan Roesberry
Chief Administrative Officer
CalTrout
ARoesberry@caltrout.org

Chad Mellison
Fisheries Biologist
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Trisha Moyer
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Bartshe Miller
Mono Lake Committee
Bartshe@monolake.org

Wendy Sugimora
Mono County
Planning Commission
WSugimora@mono.ca.gov

Julie Smith
SENIOR Consultant
Cardno
Julie.Smith@cardno.com

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 Rush Creek 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 Lahontan Regional Water Quality Control Board's Water Quality Control Plan for the Lahontan Region (Lahontan 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 Rush Creek, above Rush Creek Powerhouse. Rush Creek is tributary to Mono Lake, which is designated as an Outstanding Natural Resource Water. The Lahontan Basin Plan sets forth water quality standards for waterbodies in the region including Project-related waters of Rush Creek as well as Waugh Lake, Gem Lake, and Agnew Lake. Beneficial uses established by the Lahontan Basin Plan for Project waters relevant to water quality include municipal and domestic supply; water contact recreation; hydropower generation; water non-contact recreation; cold freshwater habitat; commercial sportfishing; wildlife habitat; and spawning, reproduction and/or early development.

In addition to beneficial uses, the Lahontan Basin Plan includes narrative and numeric surface water quality objectives that aim to preserve and protect the beneficial uses listed above. High alpine granitic watersheds, such as the Rush Creek watershed, are usually low in organic matter and typically exhibit high water quality conditions. 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 such areas. 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 and by other agencies that must take permitting actions during relicensing proceedings. Study plan information will assist the State Water Board in developing California Environmental Quality Act (CEQA) and water quality certification conditions to ensure compliance with the Clean Water Act and appropriate requirements of state law.

2. Please note, the City of Los Angeles, Department of Water and Power (LADWP) maintains water rights for diversions from Rush, Lee Vining, Parker, and Walker Creeks. LADWP's water rights licenses require minimum baseflow and flushing flow requirements, including relatively complex "Stream Ecosystem Flows" for Rush Creek downstream of the Project. LADWP's licenses also explicitly require coordination with SCE regarding the Project and related water spills, releases, and flows. As the Project proceeds through relicensing, State Water Board staff will be evaluating the Project's potential impacts on water quality, including public trust resources. For more information on relevant environmental studies and requirements regarding Rush Creek and the Mono Lake watershed, please visit the State Water Board's Mono Lake webpage at:

   https://www.waterboards.ca.gov/waterrights/water_issues/programs/mono_lake/.

3. Section 5.3 Draft Technical Study Plans states, "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 impacts and collaborate on the Proposed Project included in the License Application." 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.

4. Compliance with the 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.

5. Below, State Water Board staff are providing comments on SCE's proposed AQ-4 Water Quality Technical Study Plan:

   - State Water Board staff request the inclusion of fecal coliform sampling from Project reservoirs and sample analysis at an Environmental Laboratory Accreditation Program (ELAP) certified lab. Fecal coliform data will inform potential Project effects to recreational beneficial uses.

   - State Water Board staff request water column mercury and methylmercury sampling of all project reservoirs be included in the Water Quality Technical Study Plans. Sample results will establish baseline conditions and inform whether additional sampling would be necessary.

     According to the PAD section 4.4, there is reduced dissolved oxygen found in the bottom of project reservoirs due to seasonality and prolonged reservoir stratification. Oxygen depletion may lead to increased methylation of mercury due to anoxic conditions.

     Given the 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 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 years. State Water Board staff request the above study continues data collection for a minimum of two years.

Document Content(s)

From: Hassan, Rajaa@Waterboards
To: Julie Smith; Kendrick, Dayne@Waterboards
Cc: Ore, AnnMarie@Waterboards
Subject: RE: Rush Creek Hydroelectric Project (P-1389) - SWRCB PAD Comment Letter
Date: Friday, April 22, 2022 5:31:06 PM

Hi Julie,

Thank you for your email. Dayne is out of the office, but I can answer your question.
Please disregard the second bullet of comment 5 in the Water Board comment letter
Please let me if you have more questions/concerns or need more information.

Thank you,
-Rajaa

From: Julie Smith <Julie.Smith@cardno.com>
Sent: Friday, April 22, 2022 1:46 PM
To: Kendrick, Dayne@Waterboards <Dayne.Kendrick@waterboards.ca.gov>
Cc: Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>; Ore, AnnMarie@Waterboards <AnnMarie.Ore@waterboards.ca.gov>
Subject: RE: Rush Creek Hydroelectric Project (P-1389) - SWRCB PAD Comment Letter

EXTERNAL:

Hi Dayne,

I am with Cardno, subconsultant to SCE on the Rush Creek Relicensing. We received your comment letter and had a quick question for you. On page 3, Item 5, you reference an Attachment B, however we do not see this as part of your submittal. Can you please provide this attachment?

Thank you,

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.

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   - State Water Board staff request water column mercury and methylmercury sampling of all project reservoirs be included in the Water Quality Technical Study Plans. Sample results will establish baseline conditions and inform whether additional sampling would be necessary.

     According to the PAD section 4.4, there is reduced dissolved oxygen found in the bottom of project reservoirs due to seasonality and prolonged reservoir stratification. Oxygen depletion may lead to increased methylation of mercury due to anoxic conditions.

     Given the 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 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

Julie Smith
SENIOR CONSULTANT
CARDNO

Mobile +1 661 714 5953
Address 2890 Gateway Oaks Drive Suite 200, Sacramento, California 95833
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From: Kendrick, Dayne@Waterboards <Dayne.Kendrick@waterboards.ca.gov>
Sent: Friday, April 15, 2022 5:38 PM
To: Wr401program <Wr401program@waterboards.ca.gov>
Cc: Kendrick, Dayne@Waterboards <Dayne.Kendrick@waterboards.ca.gov>; Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>; Ore, AnnMarie@Waterboards <AnnMarie.Ore@waterboards.ca.gov>
Subject: Rush Creek Hydroelectric Project (P-1389) - SWRCB PAD Comment Letter

Hello,

You are receiving this email as a part of the interested parties list for the Rush Creek Hydroelectric Project (P-1389).

State Water Board staff hereby submits the attached comments pertaining to the Project. The comments are provided in Attachment A: Comments on Pre-Application Document for Rush Creek Hydroelectric Project.

If you have questions, please contact Dayne Kendrick, at wr401program@waterboards.ca.gov

Sincerely,

Dayne Kendrick, P.G.
Engineering Geologist
Division of Water Rights
State Water Resources Control Board
dayne.kendrick@waterboards.ca.gov

APPENDIX B

Technical Study Plans for the Rush Creek Project

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Appendix B
Proposed Technical Study Plans

B.1 INTRODUCTION

Southern California Edison Company (SCE) developed 15 Proposed Technical Study Plans to address data gaps in existing information such that sufficient information is available to evaluate potential Project impacts and collaborate on the Proposed Project included in the License Application. The 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 – Instream Flow
AQ 2 – Hydrology
AQ 3 – Water Temperature
AQ 4 – Water Quality
AQ 5 – Geomorphology
AQ 6 – Fish Population and Barriers
AQ 7 – Special-status Amphibians
Cultural and Tribal Resources
CUL 1 – Built Environment
CUL 2 – Archaeology
TRI 1 – Tribal
Land Resources
LAND 1 – Aesthetics
LAND 2 – Noise
Recreation Resources
REC 1 – Recreation
Terrestrial Resources
TERR 1 – Botanical
TERR 2 – Wildlife

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AQ 1 – INSTREAM FLOW TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 1 – Instream Flow Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Modification of aquatic and riparian habitat.
- Suitable channel maintenance flows (sediment scour/deposition).
- Rush Creek channel within the former lakebed of Waugh Lake.
- Localized flooding adjacent to the lower Rush Creek and South Rush Creek channels near State Route 158 (SR-158).

PROJECT NEXUS

- Project operations modify the flow regime in Project-affected stream segments.[1] The modified flow regime may affect the amount and distribution (temporal and spatial) of aquatic and riparian habitat, and channel maintenance (sediment scour/deposition).
- The Proposed Project would eliminate storage in Waugh Lake thereby reestablishing a permanent stream channel (Rush Creek) in the former lakebed (potential restoration site).
- The loss of reservoir storage under the Proposed Project may influence localized flooding adjacent to the lower Rush Creek and South Rush Creek channels near SR-158 in high-runoff years (potential enhancement site).

RELEVANT INFORMATION

The following information is available to characterize instream flows in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 2.7 for a summary of instream flow requirements [SCE 2021]):

- Section 2.0, Project Location, Facilities, and Operation, and Section 4.3, Water Use and Hydrology of the Rush Creek PAD, present a summary of Project operations and water use; available stream gage data; and daily historical, existing, and unimpaired hydrology for Project-affected stream segments and Project reservoirs.
- PAD Section 4.5, Fish and Aquatics presents a summary of fish population and instream flow information.

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

- Federal Energy Regulatory Commission (FERC) Environmental Assessment for Hydropower License, Rush Creek Project, FERC Project No. 1389 (FERC 1992).

- FERC Relicensing Studies (EA Engineering Science and Technology 1986, 1987) related to instream flows.

- Gaging data from United States Geological Survey (USGS), SCE, and Los Angeles Department of Water and Power (LADWP).

POTENTIAL INFORMATION GAPS

- Updated information on the relationship between instream flow and aquatic and riparian habitat.

- Data on potential flow fluctuations in Rush Creek downstream of the Rush Creek Powerhouse Tailrace.

- Availability of appropriate channel maintenance flows.

- Hydraulic information necessary to evaluate: (1) potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake; and (2) potential enhancement of the Rush Creek and South Rush Creek channels near SR-158 to address localized flooding.

- Hydraulic information necessary to evaluate potential scour/deposition of sediment in Rush Creek near the Silver Lake inlet.

STUDY OBJECTIVES

- The overall study objective is to:

    - Characterize aquatic and riparian habitat and channel maintenance as a function of flow using ecological principles and hydraulic/habitat modeling (e.g., Bovee et al. 1998), and

    - Provide hydraulic modeling data, as needed, to evaluate:

        - Potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake;

        - Potential enhancement of the Rush Creek and South Rush Creek channels near SR-158 to address localized flooding; and

        - Sediment scour/deposition in Rush Creek near the Silver Lake inlet.

EXTENT OF STUDY AREA

- The study area for evaluation of the instream flow is the Project-affected stream segments identified in Table AQ 1-1 and Map AQ 1-1.

- 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

INSTREAM FLOW MODELING

The following describes the instream flow habitat modeling approach which includes:

- Summary of the previous Instream Flow Incremental Methodology (IFIM) study;

- Selection of stream segments for modeling;

- Quantification of habitat versus flow relationships in the selected stream segments including:

    - Characterization of flow versus aquatic habitat in selected stream segments;

    - Characterization of flow versus riparian habitat stage-discharge relationship and high flow recession rates at selected transects; and

    - Characterize flow versus initiation of sediment movement and bankfull flow data for selected transects.

Previous IFIM Study

- Summarize the instream flow modeling that was developed during the previous relicensing effort (EA Engineering, Science, and Technology 1986) in Rush Creek below Rush Meadows Dam, including:

    - Data collection locations

    - Calibration flows

    - Target species and life stages

    - Habitat Suitability Criteria (HSC) curves

    - Weighted usable area (WUA) curves

    - Rationale/criteria for establishment of the current minimum instream flows, if available

Selected Stream Segments

- Model instream flow hydraulics and/or habitat in the following Project-affected stream segments (see Table AQ 1-1; Map AQ 1-1).

- Model additional locations/cross-sections identified in the TERR 1 – Botanical Technical Study Plan (TSP) and AQ 5 – Geomorphology TSP related to initiation of sediment motion / bankfull flow and riparian community inundation.

Quantification of Habitat Versus Flow Relationships

Target Species / Life Stages/ Habitat Suitability Criteria

- The target species and life stages for instream flow habitat modeling will be finalized in collaboration with interested resource agencies and stakeholders (Aquatic Technical Working Group meetings) based on management importance and/or sensitivity to Project operations.

    - SCE proposes to model rainbow trout and brown trout[2] life stages (juvenile rearing, adult rearing, and spawning/incubation life stages) and potentially brook trout life stages in the selected Project-affected stream segments as follows:

        - SCE proposes to use the rainbow trout HSC recently developed in collaboration with resource agencies for the Placer County Water Agency (PCWA) Middle Fork Project relicensing (PCWA 2011).

        - SCE proposes to use HSC developed from the brown habitat use data (fish observed data) presented in Smith and Aceituno (1987).

        - SCE proposes to evaluate available use data and/or HSC data for brook trout and determine if suitable brook trout HSC can be developed from the existing resources. Limited data is available for brook trout in western streams.

    - Sierra Nevada yellow-legged frogs (SNYLF) will only be modeled (using existing habitat suitability information[3]) if occupied breeding and rearing habitat is identified in Project-affected stream segments/reaches[4] as part of implementation of the AQ 7 – Special-status Amphibians TSP.

[2] Model brown trout in stream segments where they are known to occur and a management priority.

[3] Habitat characteristics required by Sierra Nevada yellow-legged frogs (e.g., US Fish and Wildlife Service. 2016. Designation of Critical Habitat for the Sierra Nevada Yellow-Legged Frog, the Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and the Yosemite Toad; Final Rule. Federal Register, Vol. 81, No. 166, Pages 59046–59119. August 26, 2016.)

[4] Reaches as used in this document are shorter sections of river within a longer stream segment (length of stream with homogeneous flow) that are delineated due to differences in fluvial geomorphology (e.g., stream gradient, channel confinement) or locations selected for collection of study data.

- Generate a species distribution map and life stage periodicity chart (i.e., season of occurrence) for fish, special-status amphibians, and riparian resources within Project-affected stream segments/reaches based on existing information (e.g., literature and agency consultation) and results from implementation of the AQ 6 – Fish Population and Passage TSP, AQ 7 – Special-status Amphibian TSP, and TERR 1 – Botanical Resources TSP.

Data Collection and Sampling Approach for Hydraulic and Aquatic Habit Modeling

- Data collection for hydraulic and aquatic habitat modeling will be accomplished at representative mesohabitat types (see AQ 5 – Geomorphology TSP) to support one-dimensional hydrodynamics and habitat models (Table AQ 1-1). However, in some reaches two-dimensional models will be used, particularly where other issues such as channel enhancement/restoration or sediment scour/deposition are also being addressed (Table AQ 1-1). In plunge pool habitats, empirical hydraulic and habitat data will be collected.
    - Data from each mesohabitat type will be weighted and combined to develop a representation of hydrodynamics and habitat for the larger stream segment.
    - The weighting will be based on the percentage of each mesohabitat within the stream segment.
    - Within a stream segment, mesohabitat types will be sampled approximately in proportion to their abundance.
        - Adjustments to the proportional sampling may be made based on the importance or variability of particular mesohabitat types.
        - Typically, ten mesohabitat units within a stream segment will be sampled (modeled). This provides enough sampling to replicate each major mesohabitat type (e.g., two mesohabitat samples of each type) and provides for additional sampling in abundant and/or important mesohabitat types (e.g., three or more mesohabitat samples of abundant and/or important types).
            - Each major mesohabitat type (greater than approximately 5–10% of the geomorphic/hydrologic stream segment) will be modeled (see below for exceptions).
            - Rare mesohabitat types (<5%) that provide unique or important habitat (e.g., spawning, passage) will be modeled, if present in the study site. In particular, patches of spawning gravel may be important habitat features to sample in the study sites.
            - Mesohabitat types (e.g., cascades, falls/chutes) that do not contain significant habitat for the primary target species or rare mesohabitat types (<5%) that do not have unique habitat importance will not be modeled.

- SCE will make the initial selection of the mesohabitat units to sample based on selecting representative units in areas that facilitate access. Final selection of the mesohabitat units for modeling will be completed in collaboration with interested resource agencies and stakeholders. SCE does not recommend random sampling of mesohabitat units because unrepresentative results could occur due to small sample size.

- Data collection in mesohabitat units will incorporate the following approach:

  - Typically, one to three cross-sections will be placed in each mesohabitat unit to represent habitat over a range of flows for one-dimensional modeling.

    - Fewer cross-sections may be placed in simple mesohabitat units with little variability or where the cross-sections are being placed to sample a variety of mesohabitat units of a particular type and not necessarily to fully characterize a specific mesohabitat unit.

    - In some cases, additional cross-sections may be placed in highly variable mesohabitat units, if appropriate.

    - Where two-dimensional hydraulics and habitat modeling are conducted, the entire habitat units will be represented.

  - Channel topography will generally be in the form of cross-sections (1-D). Cross-sections will be marked with semi-permanent headpins and GPS locations will be recorded. In the case of two-dimensional modeling, topography will be collected as topographic surveys and break lines.

  - Empirical water surface elevations will be measured (surveyed) for at least three calibration discharges at each cross-section for one-dimensional modeling and at least two calibration discharges along the length of the two-dimensional modeling reaches. The discharges will span the range of flows of interest (Table AQ 1-1,). The calibration flows will be determined in consultation with interested resource agencies and stakeholders once the Project hydrology has been compiled (AQ 2 – Hydrology TSP). For reference, Table AQ 1-2 provides unimpaired flow at various exceedance values at four locations on Rush Creek.

  - Empirical velocity data will be collected across each cross-section (15–20 cells/locations) at typically the high calibration discharge for one-dimensional modeling and, validation velocity data (collected on cross-sections), will be collected for two-dimensional modeling. However, because of the difficult access and steep channels the medium calibration discharge will be used unless the high flow calibration flow is safe and to access (Table AQ 1-1).

    - All velocities will be collected with calibrated velocity meters. Discharges will be measured using standard gaging techniques (e.g., Rantz 1982).

- In steep gradient reaches, plunge pool mesohabitat units will be empirically mapped at the same calibration flows proposed for hydrodynamics modeling (Table AQ 1-1). The amount of the plunge pool rearing habitat for fish species will be mapped at each flow. A flow versus habitat area relationship will be estimated for each individual plunge pool and the habitat versus flow relationships will be integrated into the stream segment-wide habitat versus flow relationships.

Evaluation of Silver Lake Backwater Effects

- To access the effects of Silver Lake water surface elevations on upstream hydraulics (backwater effects) and flow fluctuations below the Rush Creek Powerhouse, develop an hourly time series of water surface and discharge as follows:

    - Install pressure transducers (≤15 minute data collection) at the Silver Lake outflow and in the Rush Creek channel in two locations upstream of Silver Lake (near SR-158 downstream of the powerhouse tailrace, near the instream flow site upstream of the Silver Lake inlet).

    - Verify that the LADWP Rush Creek gage above Grant Lake collects 15-minute data, if not, then install a pressure transducer at the gage location.

    - Develop a stage-discharge relationships at each stage recording location, as necessary.

Hydrodynamics Modeling

- PHABSIM (e.g., Milhous et al. 1989) or equivalent one-dimensional or two-dimensional hydraulics modeling procedures will be used for modeling water surface elevations and velocities across each cross-section. These procedures include stage-discharge regressions, Manning's equations, backwater step models (e.g., WSP, HEC-RAS), IFG4, and/or two-dimensional models.

- Hydrodynamics (depth, velocity, water surface elevations) will be modeled over a range of discharges, appropriate to the Project hydrology for each stream segment (Table AQ 1-1).

Habitat Modeling

- Habitat modeling will be conducted using an approach consistent with the IFIM approach (Bovee et al. 1998). The general approach will be as follows:

    - Collect substrate and cover information for habitat modeling across each cross-section (1-D) or throughout the modeled channel (2-D) that is compatible with the HSC criteria.

    - Develop habitat modeling approaches appropriate for each selected species and life stage.

  - Develop habitat versus flow relationships for each species life stage over a wide range of flows (15-30 flows).

  - Complete a habitat time series analysis comparing the seasonal and daily distribution of habitat under Proposed Project, historical, existing, and unimpaired hydrology.

  - Compare and contrast the amount of habitat during different biologically significant time periods (e.g., reproduction, rearing) and identify potential habitat limiting factors and time periods.

  - In Rush Creek downstream of the Rush Creek Powerhouse, characterize the effects of flows and flow fluctuations on Silver Lake / Rush Creek stage. Also, incorporate the AQ 2 – Hydrology TSP operations model sub-daily flow analysis based on existing and Proposed Project operations, into the habitat modeling to address potential effects of flow fluctuations on fish habitat.

- Develop wetted perimeter versus flow relationships in the selected stream segments to characterize available habitat for other aquatic species (i.e., macroinvertebrates and amphibians) under different flow regimes.

- Identify the time periods, flow conditions, and life stages when habitat may be a limiting factor for fish, special-status amphibians, benthic macroinvertebrates, and riparian resources under historical, existing, Proposed Project, and unimpaired hydrology.

- Develop analytical tools to quantify the potential effects of other alternative flow scenarios on aquatic and riparian habitat for use during preparation of the License Application.

Empirical Plunge Pool Modeling

- Representative plunge pools will be selected (Table AQ 1-1) in steep gradient reaches and mapped at calibration flows for hydrodynamics modeling. The amount of the plunge pool that provides rearing habitat for fish species (not too shallow or turbulent) will be mapped. A flow versus suitable habitat area relationship will be estimated for each individual plunge pool and based on the average of all plunge pools mapped.

Riparian and Sediment Transport Modeling

- Characterize flow versus riparian habitat stage-discharge relationship and high flow recession rates at selected transects identified in the TERR 1 – Botanical Resources TSP.

- Characterize flow versus initiation of sediment movement and bankfull flow data at selected transects identified in the AQ 5 – Geomorphology TSP.

EVALUATION OF POTENTIAL RUSH CREEK CHANNEL RESTORATION IN THE FORMER LAKEBED OF WAUGH LAKE

The following describes the collection/analysis of information to evaluate potential restoration of the Rush Creek channel in the former lakebed of Waugh Lake including:

- Summarize the unimpaired hydrology developed in the AQ 2 – Hydrology TSP.
- Collect detailed topographic data for the channel using a combination of methods, including Light Detection and Ranging (LiDAR), aerial photogrammetry and supplemental total station surveys, as needed.
- Characterize/map the channel and floodplain substrate for hydraulic roughness characterization and erosion modeling.
- Collect model calibration water surface elevations along the channel at, at least two different flows.
- Use HEC-RAS 1D/2D and River2d (if needed) to characterize channel hydraulics (stage-discharge relationships along the channel) and erosion potential over the range of unimpaired flows (e.g., 10% to 90% exceedance flows).

EVALUATION OF POTENTIAL ENHANCEMENT OF RUSH CREEK AND SOUTH RUSH CREEK CHANNELS NEAR SR-158

The following describes the collection/analysis of information necessary to identify/evaluate potential enhancement of the Rush Creek/South Rush Creek channels near SR-158 to address potential local flooding during high-runoff events including:

- Summarize local hydrology in Rush Creek and South Rush Creek near SR-158, Rush Creek Powerhouse Tailrace, Reversed Creek, and inflow to Silver Lake developed in the AQ 2 – Hydrology TSP for historical, existing, Proposed Project, and unimpaired hydrology.
- Collect detailed topographic information for South Rush Creek near SR-158 and the needed cross-sections/topography in the Rush Creek and powerhouse tailrace channels, using a combination of LiDAR, aerial photogrammetry, and total station surveys, as needed.
- Characterize/map the channel and floodplain channel substrate and riparian vegetation (see TERR 1 – Botanical TSP) suitable for hydraulic roughness characterization.
- Collect model calibration water surface elevations along the channel at, at least two different flows.
- Use the stage-discharge relationship of Silver Lake over a range of flows (developed above) to incorporate backwater effects in the channel hydraulic modeling.

- Identify current channel conditions (i.e., downed trees, sediment, riparian encroachment, culverts) which impede flows in Rush Creek and South Rush Creek near SR-158 (see TERR 1 – Botanical TSP for riparian vegetation characterization and AQ 5 – Geomorphology TSP for channel and large woody debris characterization).

- Use HEC-RAS 1D/2D and River2d (if needed) to characterize channel and culvert hydraulics and identify potential flooding near SR-158 under the Proposed Project, existing, historical and unimpaired hydrology.

- Potential enhancements (e.g., berms, channel modification, clearing of the channel) for Rush Creek and South Rush Creek channels will be developed, as appropriate, during preparation of the License Application.

RUSH CREEK AT THE SILVER LAKE INLET

The following describes the collection/analysis of information necessary to evaluate hydrology related scour/deposition of sediment in the Rush Creek channel near the inlet of Silver Lake:

- Summarize the Rush Creek inflow hydrology to Silver Lake developed in the AQ 2 – Hydrology TSP for historical, existing, Proposed Project, and unimpaired hydrology.

- Collect detailed topographic information for Rush Creek near the inlet using a combination of LiDAR, aerial photogrammetry, total station surveys, and/or GPS tagged sonar, as needed.

- Characterize/map the channel and floodplain channel substrate and riparian vegetation (see TERR 1 – Botanical TSP) suitable for hydraulic roughness characterization.

- Collect model calibration water surface elevations along the channel at, at least two different flows.

- Use the stage-discharge relationship of Silver Lake over a range of flows (see above) to incorporate backwater effects in the channel hydraulic modeling.

- Use HEC-RAS 1D/2D and River2d (if needed) to characterize channel hydraulics and identify potential sediment scour/deposition conditions under the Proposed Project, existing, historical and unimpaired hydrology.

REPORTING

- Study methods and results will be documented in an AQ 1 – Instream Flow Technical Study Report (TSR). The TSR 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
September–November 2022	Select Project-affected stream segments for instream modeling, complete mesohabitat mapping, and select study sites
January–April 2023	Consult with the interested resource agencies and stakeholders regarding target species and life stages, habitat suitability criteria, and habitat modeling methods
April–October 2023	Conduct field data collection (topography, water surface elevations, velocities, substrate/cover)
October 2023–February 2024	Analyze data and prepare draft report
March 2024	Distribute draft report to resource agencies and stakeholders
April–June 2024	Resource agency and stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table AQ 1-1. Location of Selected Stream Segments for Instream Flow Modeling.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Methods	Purpose	Flow Range of Interest[5]	Water Surface Elevation Calibration Flows (cfs)[6]	Velocity Calibration/ Validation Flows (cfs)[7]
Rush Creek							
Waugh Lake	1.51 (RM 22.24–23.75)	RM 22.24–23.75	HEC-RAS 1D/2D and River2d (if needed)	Hydraulic modeling for potential channel restoration	0.7–189 cfs	1–3 cfs* 7–12 cfs* 50–60 cfs*	7–12 cfs* 50–60 cfs* if safe
Rush Creek below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 20.41–22.24	Cross-section hydraulic modeling	Sediment transport, bankfull flow, and riparian vegetation	0.7–189 cfs	1–3 cfs* 7–12 cfs* 50–60 cfs*	7–12 cfs*
Rush Creek Below Gem Dam to the Confluence with Reversed Creek	1.99 (RM 17.49–19.48)	RM 18.40–18.60 and RM 17.50–17.60	Cross-sections in 5 mesohabitat units (pool, run, low and high gradient riffle) in approx. proportion to availability	Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs
		RM 17.65–18.40 and RM 19.18–19.46	5 empirical plunge pool habitats	Empirical aquatic habitat modeling	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs
		RM 17.50–17.60	HEC-RAS 1D/2D	Hydraulic modeling to evaluate potential enhancement of the Rush Creek Channel	1.0–279 cfs	1–4 cfs 13–20 cfs 70–85 cfs	13–20 cfs 70–85 cfs if safe
Rush Creek Powerhouse Tailrace	—	—	HEC-RAS 1D/2D	Hydraulic modeling to evaluate potential backwater effects at the SR-158 culvert	0–100 cfs	10–20 cfs 40–60 cfs 90–100 cfs	— (not needed for this prismatic channel)
Rush Creek Above Silver Lake, including Lake Inlet	1.01 (RM 16.48–17.49)	RM 16.48–17.49	HEC-RAS 1D/2D and River2d (if needed)	• Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation • Hydraulic modeling to evaluate sediment scour/ deposition at Silver Lake Inlet	1.0–383 cfs	1–6 cfs 25–35 cfs 100–130 cfs	25–35 cfs 100–130 cfs if safe
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 13.20–15.89	Cross-sections in 10 mesohabitat units (e.g., pool, run, low and high gradient riffle) in approx. proportion to availability	Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation	1.0–383 cfs	1–6 cfs 25–35 cfs 100–130 cfs	25–35 cfs
South Rush Creek							
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.0–0.2	HEC-RAS 1D/2D and River2d (if needed)	• Hydraulic modeling, aquatic habitat modeling, sediment transport, bankfull flow, and riparian vegetation • Hydraulic modeling for potential enhancement of the Rush Creek and/or South Rush Creek channel	0–60 cfs	0.5–3 cfs* 10–20 cfs* 40–60 cfs*	10–20 cfs* 40–60 cfs* if safe

Notes:
cfs = cubic feet per second
RM = River Mile

[5] 5% to 95% unimpaired flow exceedance values
[6] Approximate/target flow ranges for hydraulic model data collection. Actual flows at time of data collection may be different.
* Flow data collection dependent on natural flow availability.
[7] If the high calibration flow is accessible and safe to collect velocity data, collect velocity data at high flow instead of the medium flow. Otherwise collect velocities at medium flow.

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Table AQ 1-2. Unimpaired Flow at Various Exceedance Values at Four Locations on Rush Creek

Exceedance Value (%)	Rush Creek Unimpaired Flow (cfs)			
	Below Rush Meadows Dam	Below Gem Dam	Below Agnew Dam	Below Silver Lake
95	0.7	1.0	1.1	6.5
90	1.2	1.8	1.9	8.2
80	2.5	3.7	3.9	12.0
50	8.9	13.1	13.8	25.5
20	51.7	76.4	80.9	112.6
10	116.0	171.5	181.4	234.2
5	188.5	278.8	294.7	382.9

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MAPS

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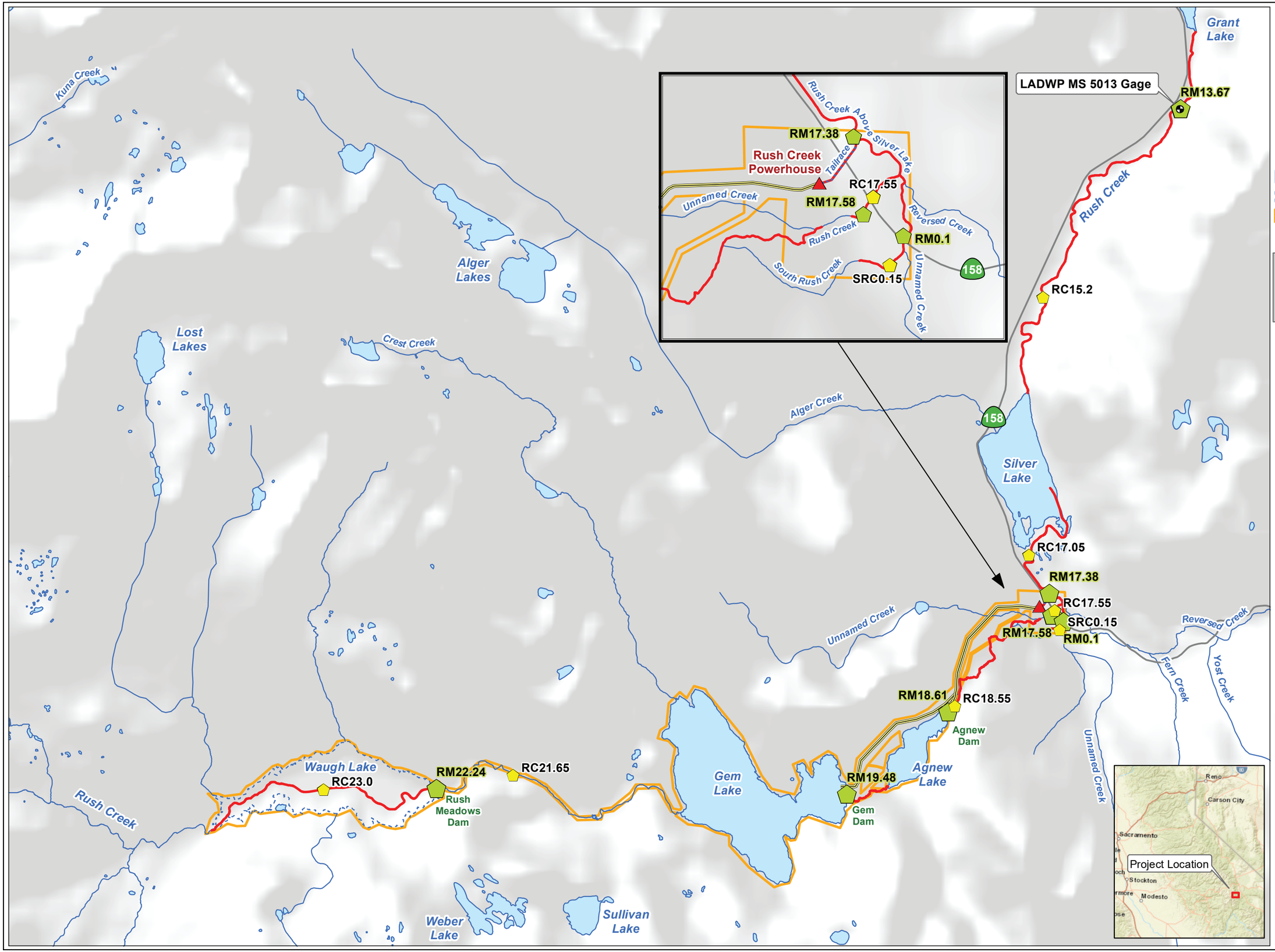

SCE Facilities
- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features
- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Study Sites and Reaches
- Hydrology Analysis Site
- Geomorphology/Riparian Site
- Instream Flow Modeling Reaches

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Rush Creek Project (FERC 1389)

Map AQ 1-1

Analysis and Survey Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/3/2021

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AQ 2 – HYDROLOGY
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 2 – Hydrology Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Modification of Rush Creek hydrology.

PROJECT NEXUS

- Project operations modify the hydrology in Project-affected stream segments[1] and Project reservoirs.

RELEVANT INFORMATION

The following information is available to characterize hydrology in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.3 for a summary of water use and hydrology information [SCE 2021]).

- Gaging data from United States Geological Survey (USGS), SCE, and Los Angeles Department of Water and Power (LADWP).

- Section 2.0 Project Location, Facilities, and Operation, and Section 4.3, Water Use and Hydrology of the Rush Creek PAD, presents a summary of Project operations and water use; available stream gage data; and daily historical, existing, and unimpaired hydrology for Project-affected stream segments and Project reservoirs.

- Hydrological analysis methodologies (Chen et al. 2017; England et al. 2018; Flynn et al. 2006; Gotvald et al. 2012; Richter et al. 1996; Veilleux et al. 2014).

POTENTIAL INFORMATION GAPS

- Modeled Proposed Project, historical, and existing hydrology, and refinement (as needed) of the analysis of unimpaired hydrology presented in the PAD Section 4.3 (SCE 2021).

- Hydrologic alteration analyses and high flow/flood-frequency analyses for the different flow regimes in Project-affected stream segments.

- Hydrology of the lower Rush Creek and South Rush Creek channels near State Route 158 (SR-158) related to potential enhancement.

STUDY OBJECTIVES

- Model the Proposed Project, historical, and existing hydrology, and refine (as needed) the analysis of unimpaired hydrology presented in the PAD Section 4.3 (SCE 2021).

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

- Perform a hydrologic alteration analysis for the unimpaired, existing, and Proposed Project flow regimes in the select Project-affected stream segments.

- Conduct a high flow/flood-frequency analysis for the different flow regimes in the select Project-affected stream segments.

- Develop hydrology data for the lower Rush Creek and South Rush Creek channels near SR-158 to facilitate the evaluation of potential enhancements to address local flooding of residences during high-runoff events.

EXTENT OF STUDY AREA

- The study area for development of the Proposed Project, historical, existing, and unimpaired hydrology includes Project-affected stream segments (Table AQ 2-1 and Map AQ 2-1). The locations for the hydrological alteration analyses and high flow/flood-frequency analyses are also included in 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) 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 following describes the study approach for developing Project hydrology; conducting a hydrologic alteration analyses and flood-frequency analyses; developing potential channel enhancement hydrology; and reporting.

HYDROLOGY DEVELOPMENT

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

- Use the 2000–2021 period of record (POR) for hydrological modeling based on data availability (historical gage data) (SCE 2021).

- Refine the modeled unimpaired (without the Project[2]) daily average flow hydrology presented in PAD Section 4.3 for the POR based on modeling working group input, as appropriate.

- Develop and use a spreadsheet operations model (or a HEC-ResSim model, if needed)[3], to characterize the Proposed Project (future operations[4]), historical

[2] The unimpaired hydrology (2000–2019) presented in the PAD represents synthesized instream flows in Rush Creek without the influence of the Rush Creek Project.

[3] If limitations in representing the daily hydrology using a spreadsheet model are identified by the stakeholder modeling group, a HEC-ResSim model will be used. The goal of the operations model is to accurately and transparently represent operations.

[4] The Proposed Project hydrology is the modeled hydrology based on how the Project will be operated in the future with removal of Waugh Lake and the reservoir portion of Agnew Lake and modified operations (including maximum storage) at Gem Lake.

(operations prior to reservoir seismic restrictions[5]), existing (current operations under seismic restrictions[6]) daily average flow hydrology for the POR based on the modeling working group input, as appropriate.

  - Downstream of the Rush Creek Powerhouse, incorporate a sub-daily component into the operations model results (post processor) or into the model to characterize the range of flow fluctuations related to powerhouse operations.

- Identify available climate change data / modeling applicable to the Rush Creek Watershed. If data / modeling exists, incorporate, as appropriate, to characterize future climate change hydrology (unimpaired, Proposed Project) over the term of the new license (e.g., 50 years).

HYDROLOGIC ALTERATION ANALYSIS

- Analyze and compare Proposed Project, historical, existing, and unimpaired daily average flows using the following data and approaches in select Project-affected stream segments (Table AQ 2-1 and Map AQ 2-1) (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).

[5] The historical hydrology (2000–2011) will be used to develop / calibrate the historical hydrology model over the 2000–2021 POR. The historical hydrology represents instream flows and Project operation under the existing license conditions prior to implementation of the seismic restrictions in 2012.

[6] The existing hydrology (2012–2019) will be used to develop / calibrate the existing hydrology model over the 2000–2021 POR. The existing hydrology represents instream flows and Project operation under the existing license conditions and implementation of the seismic restrictions in 2012.

FLOOD FREQUENCY

- Generate a flood-frequency analysis for the Proposed Project, historical, existing, and unimpaired flows using annual peak daily flow data and peak flow estimates in select Project-affected stream segments.

    - Determine the best method to estimate peak flow from peak daily flow (e.g., Chen et al. 2017) and generate a 2000–2021 annual peak flow data set.

    - Use PeakFQ (Veilleux et al. 2014; Flynn et al. 2006), a software package developed by the USGS, which uses Bulletin 17c (England et al. 2018) procedures for flood-frequency analysis of streamflow records, or equivalent, and estimate flood magnitudes (annual daily average peak) and their corresponding annual exceedance probabilities.

    - Use regional flood-frequency curves (Gotvald et al. 2012) to develop an additional estimate of unimpaired peak flow magnitudes and their corresponding annual exceedance probabilities.

    - Summarize any other peak flow or probable maximum flood (PMF) data available for the study area (e.g., PMF calculations for the SCE dams by Geotechnical Water Resources in 2011), including historical flow data outside of the 2000–2021 analysis period of record. Include this data, as appropriate, in the characterization of high flow events.

POTENTIAL ENHANCEMENT HYDROLOGY

- Generate hydrological data for the lower Rush Creek and South Rush Creek channels near SR-158 to facilitate the evaluation of potential enhancements to address local flooding of residences during high-runoff events including:

    - Determine the Rush Creek/South Rush Creek percent flow split downstream of Horseshoe Falls over a range of flow conditions (e.g., minimum flow releases from Agnew Dam to peak flow events).

        - Use temporary gage data from South Rush Creek (see gage installation below) and data from USGS gage 10287289 (Rush Creek at Flume below Agnew Lake near June Lake, California) to determine the flow split relationship. Also, use any historical data collected to help determine the flow split relationship (e.g., 2017 empirical flow data).

    - Determine additional flows entering South Fork Rush Creek and Rush Creek near SR-158.

- Install and operate[7] temporary gages (October 2022 to September 2024) at the following locations:
  - South Rush Creek upstream of SR-158 (River Mile [RM] 0.2).
  - Unnamed tributary entering South Rush Creek upstream of SR-158 (RM 0.12).
  - Unnamed tributary entering Rush Creek upstream of SR-158 (RM 17.66).
  - Reversed Creek upstream of the confluence with Rush Creek (RM 0.25).
- Use the empirical data and watershed area to develop a time series of accretion to South Rush Creek, Rush Creek upstream of SR-158, and Reversed Creek to Rush Creek.

- Estimate the peak design flow for each of the channels / culverts at SR-158 (South Rush Creek, Rush Creek, and Powerhouse Tailrace). Potential backwater effects from Silver Lake on the channels and culverts near SR-158 during spring high flows will be developed in the AQ 1 – Instream Flow Technical Study Plan.

REPORTING

- The study methods and results will be documented in an AQ 2 – Hydrology Technical Study Report (TSR). The TSR 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
September–November 2022	Collaborate with stakeholder modeling working group on approach for refining the historical, existing, and unimpaired hydrology (as appropriate); and developing the Proposed Project hydrology Install temporary flow gages
January–April 2023	Develop the Proposed Project hydrology and refine the analysis of the historical, existing, and unimpaired hydrology
April–June 2023	Complete the hydrologic alteration analysis and flood-frequency analysis

[7] During the winter time period the gages will be operated to the extent reasonably possible given the potential for ice and snow cover. The primary operation period will focus on fall, spring, and summer.

Date	Activity
July–December 2023	Summarize data and prepare draft report (incorporating October 2022–September 2023 data)
January 2024	Distribute draft report to stakeholders
February–April 2024	Stakeholders review and provide comments on draft report (90 days)
April–May 2024	Resolve comments and prepare final report
August–September 2024	Uninstall temporary flow gages Distribute draft final report in Draft License Application (incorporating October 2023–September 2024 data)
January 2025	Distribute final report in Final License Application (incorporating comments by stakeholders on the draft final report filed with the Draft License Application)

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TABLES

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Table AQ 2-1. Hydrology Analysis Locations in Project-affected Stream Segments.

Location Name	Location (RM)	Proposed Project, Historical, Existing, Unimpaired Hydrology			Proposed Project Hydrology Potential Enhancement Hydrology Data Collection (2022–2023)
		Daily Average Hydrology (2000–2021 POR)	Hydrological Alteration Analysis (2000–2021 POR)	High Flow / Flood-Frequency Analysis (2000–2021 POR)	
Rush Creek					
Rush Creek at Rush Meadows Dam	RM 22.24	X	X	X	—
Rush Creek at Gem Dam	RM 19.48	X	X	X	—
Rush Creek Below Agnew Dam	RM 18.61	X	X	X	—
Rush Creek above SR-158	RM 17.58	X	X	X	X
Rush Creek Above Silver Lake	RM 17.38	X	X	X	—
Rush Creek Below Silver Lake	RM 13.67	X	X	X	—
South Rush Creek					
South Rush Creek	RM 0.1	X	X	X	X

Notes:
POR = Period of Record
RM = River Mile

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MAPS

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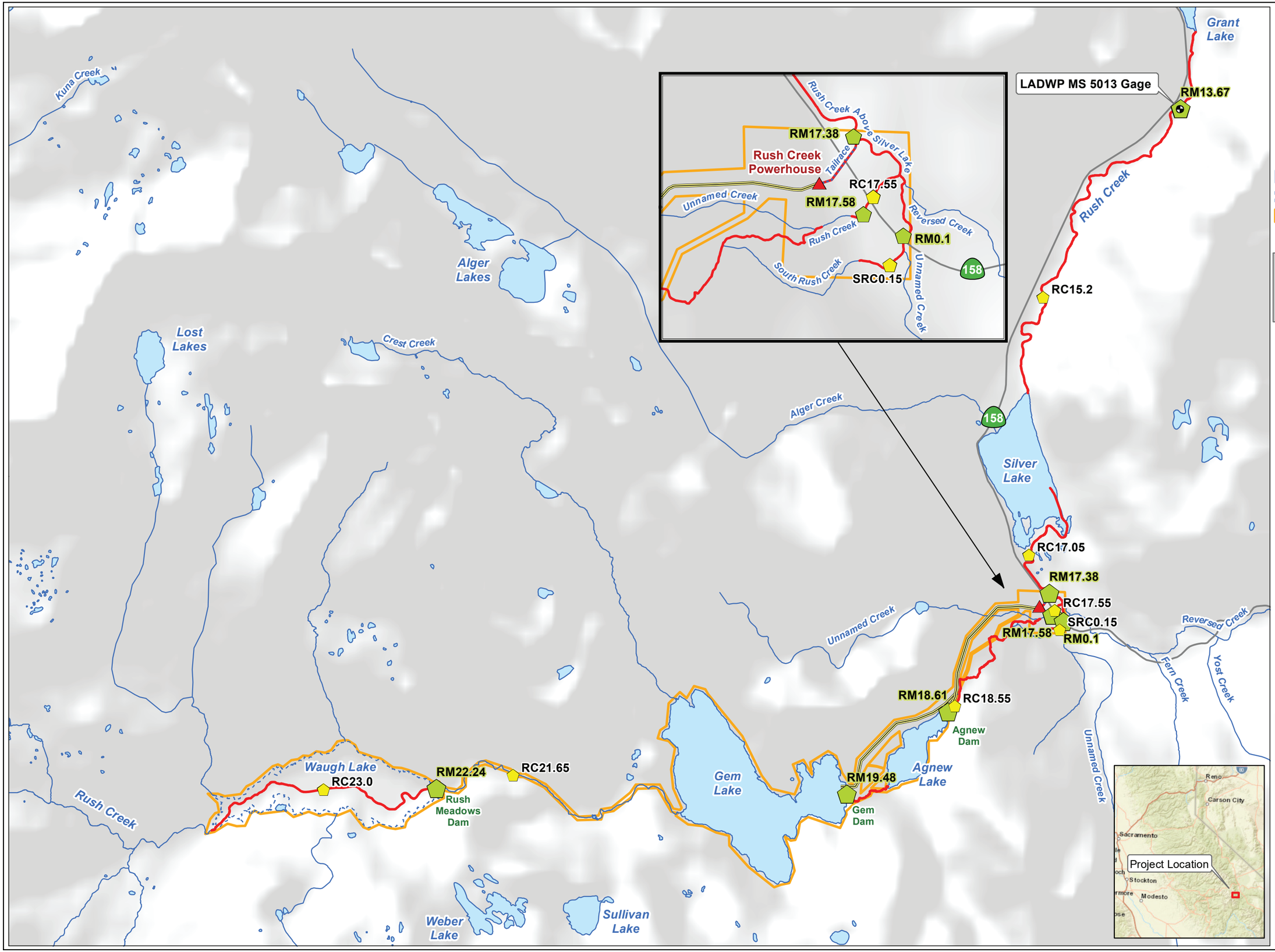

SCE Facilities
- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features
- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Study Sites and Reaches
- Hydrology Analysis Site
- Geomorphology/Riparian Site
- Instream Flow Modeling Reaches

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Rush Creek Project (FERC 1389)

Map AQ 2-1

Analysis and Survey Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/3/2021

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AQ 3 – WATER TEMPERATURE TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 3 – Water Temperature Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Aquatic habitat quantity and quality.
- Basin Plan objectives compliance.

PROJECT NEXUS

- Project operations and reservoirs modify the flow regime in Project-affected stream segments[1] influencing instream water temperatures.

RELEVANT INFORMATION

The following information is available to characterize water temperature in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.4 Water Quality for a summary of water temperature information [SCE 2021]).

- Federal Energy Regulatory Commission (FERC) Environmental Assessment for Hydropower License, Rush Creek Project, FERC Project No. 1389 (FERC 1992).
- FERC Order Issuing New License, Rush Creek Project (FERC 1997).
- FERC Relicensing Studies (EA Engineering Science and Technology 1986 and 1988; Lund 1988) related to instream flows and reservoir water quality.
- Inland fishes of California, University of California Press, Berkeley (Moyle 2002).
- Water Quality Control Plan for the Lahontan Region (Basin Plan) (CRWQCB 2019).
- United States Geological Survey's (USGS) National Water Information System and the California Environmental Data Exchange Network (CEDEN) online databases provided water quality information.

POTENTIAL INFORMATION GAPS

- Water temperature conditions in Project-affected stream segments and Project reservoirs.

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

STUDY OBJECTIVES

- Characterize existing water temperature and meteorological conditions in Project-affected stream segments.

- Characterize existing water temperature information (profiles) in Project reservoirs and Silver Lake. This is developed and evaluated as part of the AQ 4 – Water Quality Technical Study Plan (TSP).

- Qualitatively assess the potential effects of increased air temperature due to global warming on water temperatures over the term of the new FERC license.

EXTENT OF STUDY AREA

- The study area for characterization of water temperature includes Project-affected stream segments and Reversed Creek. Water temperature sampling locations are identified in Table AQ 3-1 and Map AQ 3-1.

- The study area also includes the Project reservoirs (Gem Lake, Agnew Lake) and Silver Lake (see AQ 4 – Water Quality TSP).

- 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

- Collect existing water temperature and meteorological conditions in Project-affected stream segments and Reversed Creek identified in Table AQ 3-1 from May 15 to October 15, 2023 at the high elevation sites (>7,300 feet; powerhouse elevation) and from May 15 to December 1, 2023 at the lower elevation sites (≤7,300 feet), weather and access permitting.

    - Install and maintain redundant water temperature probes at nine locations in Project-affected stream segments and one location in Reversed Creek.

    - Obtain meteorological station data (relative humidity, wind speed, solar radiation, air temperature) from three existing locations (Gem Pass, June Mountain Summit, and near Rush Creek Powerhouse).[2]

    - Download data bi-monthly from the water temperature probes.

[2] Gem Pass (CA Dept of Water Resource; 2014 to Present) https://cdec.water.ca.gov/webgis/?appid=cdecstation&sta=GEM; June Mountain Summit (SCE, Bishop; 2012 to Present) https://cdec.water.ca.gov/webgis/?appid=cdecstation&sta=JMS; Rush Creek Powerhouse (US Forest Service; 2005 to Present) https://cdec.water.ca.gov/webgis/?appid=cdecstation&sta=RSH.

  - Summarize temperature and meteorological data, including depiction of seasonal patterns and daily averages, minimums, and maximums as a function of time and location in Project-affected stream segments and aquatic species requirements (e.g., Moyle 2002).

- Coordinate with the AQ 4 – Water Quality TSP to obtain water temperature profiles from Gem Lake, Agnew Lake, and Silver Lake.

- Review available literature predictions of changes in air temperature as a result of global warming to qualitatively evaluate the resulting effect on water temperature over the anticipated term of the new FERC license (30-50 years).

REPORTING

- Study methods and results will be documented in an AQ 3 – Water Temperature Technical Study Report (TSR). The TSR 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
May 15–October 15, 2023	Install and maintain temperature probes
October 15–December 1, 2023	Maintain low elevation (≤7,300 feet; powerhouse elevation) temperature probes
October 2023–February 2024	Analyze data and prepare draft report
March 2024	Distribute draft report to stakeholders
April–June 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

REFERENCES

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TABLES

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Table AQ 3-1. Water Temperature Sampling Locations.

Stream Segment Name	Segment Length (miles) / River Mile (RM)	Sampling Location River Mile / Site ID	Sampling Dates
Rush Creek			
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.4 / RC23.4	May 15–Oct 15, 2023
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65	May 15–Oct 15, 2023
Gem Lake	0.93 (RM 19.48–20.41)	GL-1 (mid-lake) GL-2 (near the dam) [Sampled as part of AQ 4 – Water Quality TSP]	Jun, Jul, Aug, Sep, Oct 2023
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	RM 19.25 / RC19.25	May 15–Oct 15, 2023
Agnew Lake	0.58 (RM 18.60–19.18)	AL-1 (mid-lake) [Sampled as part of AQ 4 – Water Quality TSP]	Jun, Jul, Aug, Sep, Oct 2023
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55	May 15–Oct 15, 2023
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—	—
Rush Creek Powerhouse Tailrace	—	PHTR	May 15–Dec 1, 2023
Reversed Creek	—	100–200 feet upstream of the confluence with South Rush Creek / RVC0.26	May 15–Dec 1, 2023
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.15 / RC17.15 RM 17.6 / RC17.6	May 15–Dec 1, 2023
Silver Lake	0.83 (RM 15.89–16.72)	SL-1 (mid-lake) SL-2 (near outlet) [Sampled as part of AQ 4 – Water Quality TSP]	Jun, Jul, Aug, Sep, Oct 2023
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.6 / RC15.6 RM 13.7 / RC13.7 (LADWP gaging station location)	May 15–Dec 1, 2023
South Rush Creek			
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15	May 15–Dec 1, 2023

Notes:
RM = River Mile
TSP = Technical Study Plan

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MAPS

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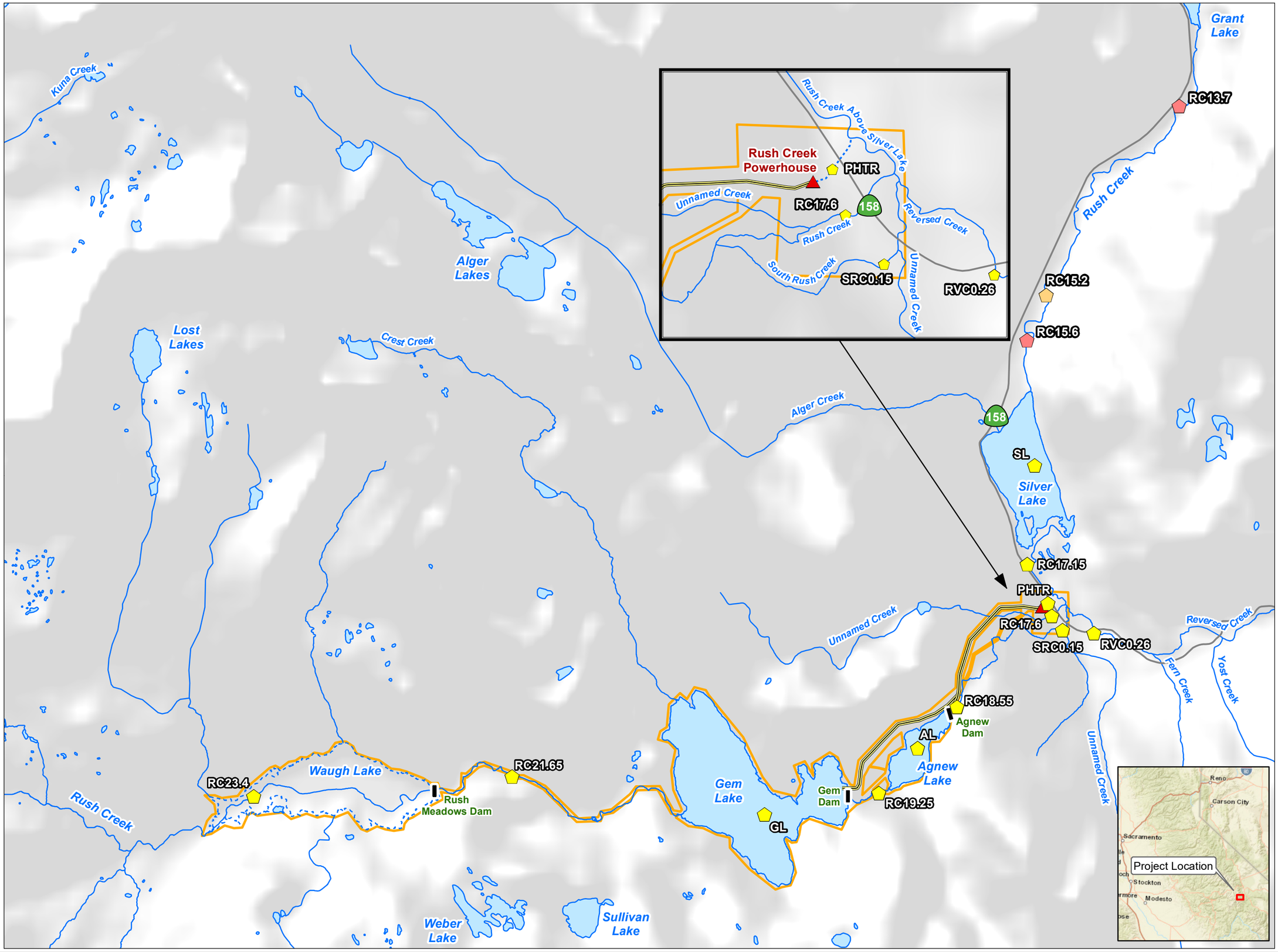

SCE Facilities
- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features
- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Sampling Locations
- Water Temp
- Water Quality
- Water Temp, Water Quality

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Rush Creek Project (FERC 1389)

Map AQ 3-1

Sampling Locations

0 0.25 0.5 Miles

Date: 5/13/2022

Projection: UTM Zone 11
Datum: NAD 83

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AQ 4 – WATER QUALITY
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 4 – Water Quality Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Water quality compliance with regulatory requirements.

PROJECT NEXUS

- Project operations and maintenance activities could affect water quality in Project-affected stream segments[1] and Project reservoirs.

RELEVANT INFORMATION

The following information is available to characterize water quality in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.4 for a summary of water quality information [SCE 2021]):

- 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, EPA 2000).

- Federal Energy Regulatory Commission (FERC) Environmental Assessment for Hydropower License, Rush Creek Project, FERC Project No. 1389 (FERC 1992).

- FERC Order Issuing New License, Rush Creek Project (FERC 1997).

- National Toxics Rule (NTR) Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants" (Federal Register, 57 FR 60848, EPA 1992).

- Water Quality Control Plan for the Lahontan Region (Basin Plan) (CRWQCB 2019).

- United States Geological Survey's (USGS) National Water Information System and the California Environmental Data Exchange Network (CEDEN) online databases provided water quality information.

POTENTIAL INFORMATION GAPS

- Water quality conditions in Project-affected stream segments and Project reservoirs.

STUDY OBJECTIVES

- Collect seasonal water quality data (physical, chemical, and bacterial) in Project-affected stream segments and Project reservoirs.

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

- Compare water quality 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 assessment includes Project-affected stream segments and Project reservoirs. Water quality sampling locations are identified in Table AQ 4-1 and Map AQ 4-1.

- 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 following describes the water quality sampling field program which includes seasonal *in-situ* water quality measurements; seasonal water quality grab sampling; reservoir/lake profiles; and laboratory analysis and reporting.

WATER QUALITY SAMPLING LOCATIONS

- Water quality sampling locations are identified in Table AQ 4-1 and depicted on Map AQ 4-1.

- 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.

SEASONAL *IN-SITU* FIELD MEASUREMENTS – STREAMS

- 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 Rush Creek and Reversed Creek.

    - Samples will be collected once during the spring runoff (June, access permitting), and once during the late summer/early fall base-flow period (September, in coordination with AQ 6 – Fish Population and Passage Technical Study Plan).

    - 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 Project-affected stream segments and Reversed Creek; Project reservoirs; and Silver Lake.
    - Samples will be collected twice, once during the spring runoff and once during the late summer/early fall base-flow period in coordination with the in-situ water quality measurements to screen for potential water quality issues.
    - If potential water quality issues are identified, additional follow-up sampling may be necessary. Additional sampling, if necessary, will be determined in consultation with the resource agencies and other interested parties.
    - 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 lake sampling locations, grab samples will be collected from the epilimnion (1 m deep) and hypolimnion (mid-depth between the thermocline and lake bottom). If the lakes are not stratified, then water grab samples will be collected approximately 1 m from the surface and at mid-depth from surface to lake bottom.
- 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.

RESERVOIR/LAKE PROFILES

- Collect reservoir/lake profiles (DO, pH, specific conductance, salinity, turbidity, and water temperature) at Gem, Agnew, and Silver lakes.[2]
    - Samples will be collected monthly in June, July, August, September, and October 2023.
    - Water quality profiles in the reservoirs/lake will be based on a ≤1 meter (m) sampling interval through the entire water column.
    - Secchi disk depth measurements of water clarity will also be collected in each reservoir/lake.
    - Samples will be collected using a multi-parameter water quality meter.
    - Pre- and post-sampling calibration of in-situ instrumentation will be conducted following the manufacturer's instructions.

BACTERIAL SAMPLING

- Collect surface water bacteria samples for total and fecal coliform in Gem and Agnew lakes in accessible locations near the dams (Table AQ 4-2). Sample five relatively evenly spaced times in the month of July 2023.

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 analysis.
- The parameters to be analyzed by the analytical laboratory are provided in Table AQ 4-2.
- The laboratory will report each chemical 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 Basin Plan (CRWQCB 2019) and with other relevant water quality standards.

[2] The low-level outlet at Rush Meadows Dam remains open such that little/no water is currently impounded in Waugh Lake. Rush Creek essentially flows unimpeded through the historic lake bed. Therefore, in this study, Waugh Lake is treated as a stream segment for water quality sampling.

REPORTING

- Study methods and results will be documented in an AQ 4 – Water Quality Technical Study Report (TSR). The TSR 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
June 2023	Conduct spring water quality *in-situ* and grab sampling
June/July/August/September/October 2023	Conduct monthly *in-situ* reservoir/lake profiling
July 2023	Conduct bacteria sampling at Gem and Agnew lakes
September 2023	Conduct summer/fall water quality *in-situ* and grab sampling
October 2023–February 2024	Analyze data and prepare draft report
March 2024	Distribute draft report to stakeholders
April–June 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

REFERENCES

CEDEN (California Environmental Data Exchange Network). Online Database. Available at: http://www.ceden.org/.

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TABLES

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Table AQ 4-1. Water Quality Sampling Locations.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Number of Sampling Locations	*In-situ* Field Measurements	Water Quality Grab Samples	Reservoir / Lake Profiles
Rush Creek						
Waugh Lake[a]	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0	1	X	X	—
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65	1	X	X	—
Gem Lake	0.93 (RM 19.48–20.41)	GL-1 (mid-lake) GL-2 (near the dam)	2	—	X	X
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	RM 19.25 / RC19.25	1	X	X	—
Agnew Lake	0.58 (RM 18.60–19.18)	AL-1 (mid-lake)	1	—	X	X
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55	1	X	X	—
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—	—	—	—	—
Rush Creek Powerhouse Tailrace	—	PHTR	1	X	X	—
Reversed Creek	—	100–200 feet upstream of the confluence with South Rush Creek / RVC0.26	1	X	X	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.15 / RC17.15 RM 17.6 / RC17.6	2	X	X	—

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Number of Sampling Locations	*In-situ* Field Measurements	Water Quality Grab Samples	Reservoir / Lake Profiles
Silver Lake	0.83 (RM 15.89–16.72)	SL-1 (mid-lake) SL-2 (near outlet)	2	X	X	X
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2	1	X	X	—
South Rush Creek						
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15	1	X	X	—

Notes:
RM = River Mile

[a.] The low-level outlet at Rush Meadows Dam remains open such that little/no water is currently impounded in Waugh Lake. Rush Creek essentially flows unimpeded through the historic lake bed. Therefore, Waugh Lake is treated as a stream segment for water quality sampling.

Table AQ 4-2. Parameters for Water Quality Monitoring and Laboratory Analysis

Parameter	Analysis Method	Sample Holding Times	Sample Locations to be Analyzed
Water Quality Monitoring Parameter			
***In-Situ* Measurements**			
Dissolved Oxygen (DO)	Water Quality Meter	Not Applicable	All
Secchi Depth	Secchi Disk	Not Applicable	Reservoir
PH	Water Quality Meter	Not Applicable	All
Water Temperature	Water Quality Meter	Not Applicable	All
Specific Conductance	Water Quality Meter	Not Applicable	All
Laboratory Analysis Parameter			
General Parameters			
Nitrate/Nitrite	EPA - 353.2	48 hours	All
Ammonia as N	EPA - 350.1	28 days	All
Total Kjeldahl Nitrogen	EPA - 351.2	28 days	All
Total Phosphorus	EPA - 365.2	28 days	All
Ortho-phosphate	EPA - 365.1	48 hours	All
Total Dissolved Solids	EPA - 160.1	7 days	All
Total Suspended Solids	EPA - 160.2	7 days	All
Total Alkalinity	EPA - 310.1	14 days	All
Bacteria			
Total Coliform	EPA - SM9222B	24 hours	Gem and Agnew lakes
Fecal Coliform	EPA - SM9222B	24 hours	Gem and Agnew lakes

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MAPS

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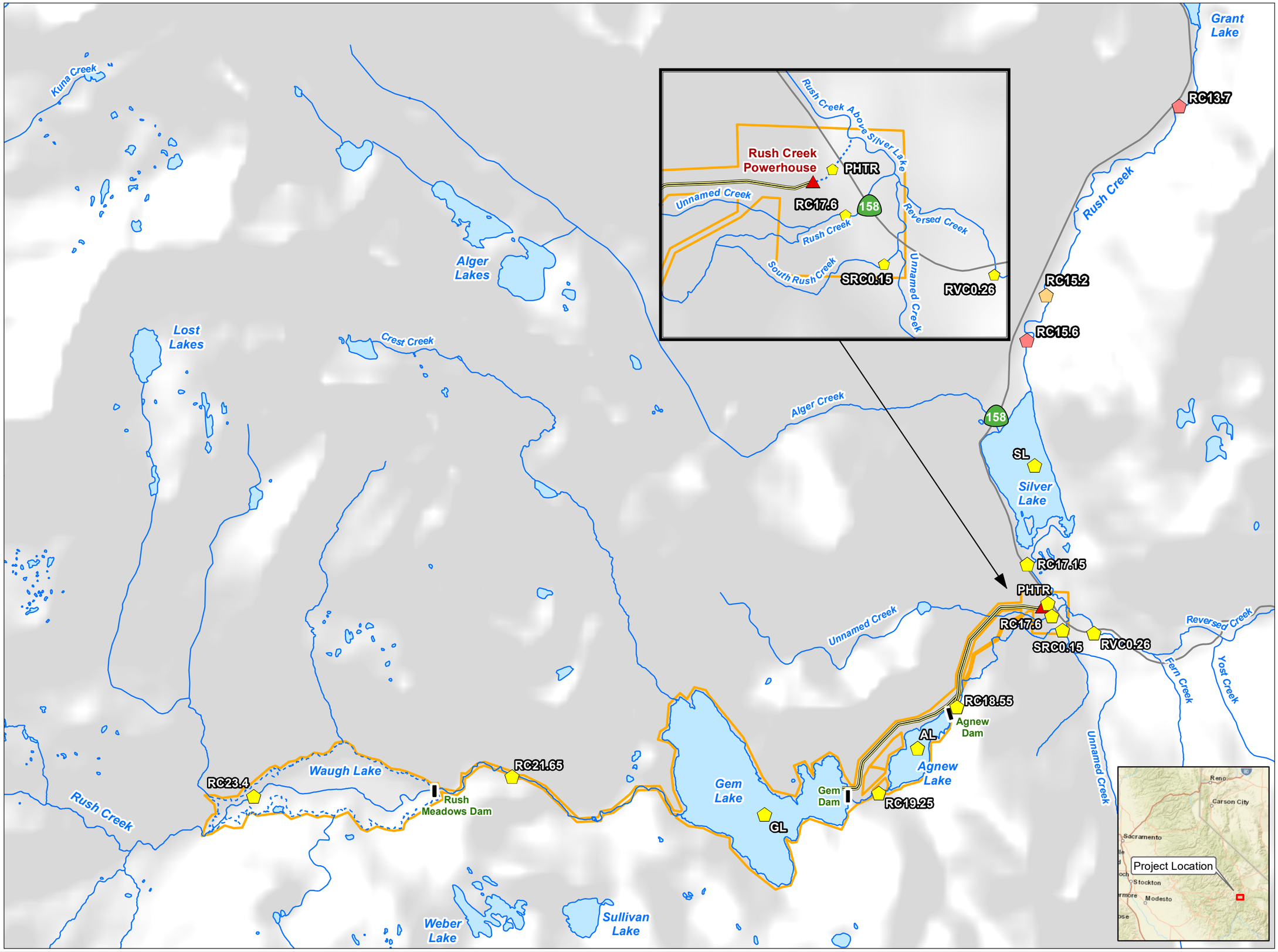

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Sampling Locations

- Water Temp
- Water Quality
- Water Temp, Water Quality

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Rush Creek Project (FERC 1389)

Map AQ 4-1

Sampling Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 5/13/2022

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AQ 5 – GEOMORPHOLOGY TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 5 – Geomorphology Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Stable channel morphology and maintenance of fluvial processes.
- Project-related sources of sediment and erosion.
- Rush Creek channel within the former lakebed of Waugh Lake.
- Localized flooding adjacent to the lower Rush Creek and South Rush Creek channels near State Route 158 (SR-158).
- Sediment scour/deposition in Rush Creek near the Silver Lake inlet.

PROJECT NEXUS

- Project operations modify the flow and sediment regime in the Project-affected stream segments[1] and reservoirs potentially resulting in changes to channel morphology and fluvial processes.
- The proposed removal of Rush Meadows and Agnew dams will influence overall hydrology; sediment capture/transport; and potential erosion of the deposited sediment adjacent to the historic channels in the former lakebeds.
- The loss of reservoir storage under the Proposed Project may influence localized flooding adjacent to the lower Rush Creek and South Rush Creek channels near SR-158 in high-runoff years.

RELEVANT INFORMATION

The following information is available to characterize geomorphology in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.8 for a summary of geomorphology information [SCE 2021]):

- Section 2.0, Project Location, Facilities, and Operation, and Section 4.3, Water Use and Hydrology of the Rush Creek PAD, present a summary of Project operations and water use; available stream gage data; and daily historical, existing, and unimpaired hydrology for Project-affected stream segments and Project reservoirs.
- Federal Energy Regulatory Commission (FERC) Environmental Assessment for Hydropower License, Rush Creek Project, FERC Project No. 1389 (FERC 1992).

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

- FERC Relicensing Studies (EA Engineering Science and Technology 1986, 1987) related to instream flows.
- Gaging data from United States Geological Survey (USGS), SCE, and Los Angeles Department of Water and Power (LADWP).
- Aerial imagery (Google Earth Pro 2019).
- Channel-reach morphology in mountain drainage basins (Montgomery and Buffington 1997).
- USGS 1:24,000 Topography Maps and Digital Elevation Models.
- California Fire Perimeters 1879-2019 Feature Layer (FRAP 2021).
- Rush Creek stream sediment survey Waugh Lake to Gem Lake (Hinkle 1988).

POTENTIAL INFORMATION GAPS

- Characterization of existing stream channels (morphology, mesohabitat types, and sediment conditions).
- Sediment capture in Project reservoirs.
- Identification of flows necessary to maintain geomorphic processes in the Project-affected stream segments.
- Project-related sources of sediment and erosion.
- Geomorphic information necessary to evaluate:
  - Potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake;
  - Potential enhancement of the Rush Creek and South Rush Creek channels near SR-158 to address localized flooding; and
  - Sediment scour/deposition in Rush Creek near the Silver Lake inlet.

STUDY OBJECTIVES

- Characterize the existing stream channels (morphology, mesohabitat types, and sediment conditions) in the Project-affected stream segments.
- Characterize sediment capture/deposition in the Project reservoirs.
- Develop information to assist in the identification of flows necessary to maintain geomorphic processes in the Project-affected stream segments.

- Identify historical and existing sources of sediment within and adjacent to Project-affected stream segments, Project reservoirs, and other Project facilities, including major gullies; areas of vegetation and/or soil loss; hillslope destabilization; and erosion associated with ongoing operation and maintenance of the Project. Natural sources of sediment unrelated to the Project will also be documented in the Project vicinity.

- Provide a geomorphic analysis, as needed, to evaluate:

  - Potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake;

  - Potential enhancement of the Rush Creek and South Rush Creek channels near SR-158 to address localized flooding; and

  - Sediment scour/deposition in Rush Creek near the Silver Lake inlet.

EXTENT OF STUDY AREA

- The study area for geomorphology includes Project-affected stream segments, Project reservoirs, and Project facilities. Geomorphology sampling sites are identified in Table AQ 5-1 and Map 5-1. Table AQ 5-2 provides a list of Project facilities.

- 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 following describes the geomorphology study approach which includes data collection and analyses for: (1) characterizing channel conditions in the Project-affected stream segments; (2) evaluating sediment capture/deposition in Project reservoirs; (3) identifying flows necessary to maintain geomorphic processes; (4) identifying historical and existing sediment sources and Project-related erosion areas; (5) development of potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake; (6) development of potential enhancement of channels near SR-158; and (7) evaluation of sediment deposition/transport in Rush Creek near the Silver Lake inlet.

CHANNEL CONDITION IN THE PROJECT-AFFECTED STREAM SEGMENTS

Stream Segment Classification and Mesohabitat Typing

- In each of the Project-affected stream segments (Table AQ 5-1) do the following:
  - Refine the desktop channel characterization, as needed, of each stream segment (and unique reaches[2] within each segment) presented in Section 4.8, Geomorphology using the Montgomery-Buffington (1997) process-based categories.
  - Estimate the Rosgen Level II classification (channel pattern, entrenchment ration, width/depth ratio, sinuosity, channel material, slope) for each stream segment/reach using available data and data collected at the sampling locations in Table AQ 5-1 (Rosgen 1994). In the Rush Meadows Dam to Gem Lake stream segment, there are lower gradient and steeper gradient reaches, collect the data necessary to characterize both reaches.
- Mesohabitat map (type) (either by helicopter, high resolution aerial photographs, and/or foot travel) all river segments using the detailed level of mesohabitat typing outlined in McCain et al. (1990) (i.e., a potential of 22 mesohabitat types). An overlap (10%; 1 mile) between on-ground and helicopter/aerial photography delineated mesohabitats will be used to calibrate/validate the helicopter/aerial photography derived mesohabitat classifications.
  - These habitat types will be collapsed into a lower level of detail to facilitate river stratification for instream flow modeling. SCE proposes to aggregate the McCain et al. (1990) mesohabitat types into approximately six types (pool, run, low-gradient riffle, high-gradient riffle, cascade, and falls/chutes) for stratification of the study sites and stream segments.

Sediment Conditions in the Project-affected Stream Segments

The amount of fine sediment in pools and the particle size composition and fine sediment content in spawning gravels will be determined in the Project-affected stream segments, as described below.

[2] Reaches as used in this document are shorter sections of river within a longer stream segment (length of stream with homogeneous flow) that are delineated due to differences in fluvial geomorphology (e.g., stream gradient, channel confinement) or locations selected for collection of study data.

Fine Sediment in Pools

A quantitative analysis of fine sediment in pools, V* (Hilton and Lisle 1993), will be conducted.

- Conduct quantitative visual estimates of residual fine sediment in five pools, V* (Hilton and Lisle 1993), at each of the sampling locations (selected stream reaches) in the Project-affected stream segments (Table AQ 5-1 and Map 5-1).
    - Visual estimates of V* will be made using a snorkel and mask, as necessary. The visual surveys will be supported by a combination of photographic documentation of pool bottom sediments and sketch maps, and measurements of the surface area and depth of any fine sediment patches observed.
    - Pools with V* values that are relatively low (less than 0.1) can be reasonably approximated by visual estimation (Hilton and Lisle 1993). If there are problems completing the V* estimates (for example, due to excessive pool depths or V* values exceed 0.1), the issue will be communicated to the resource agencies for further consultation.

Particle Size Composition and Fine Sediment Content in Spawning Gravels

- Determine particle size distribution and fine sediment content of spawning gravels in the selected stream reaches within the Project-affected stream segments using bulk sampling techniques (McNeil and Ahnell 1960). The locations are listed in Table AQ 5-1 and Map 5-1.
    - Collect bulk samples in three representative gravel patches using a modified McNeil sampler (i.e., bottomless bucket) to depths that approximate that of a trout egg pocket. Coarse sediments will be sieved and weighed on-site. Finer sediments will be packaged for transport from the field site and later dried, sieved, and weighed.
    - One “side-by-side” replicate pair of bulk samples will be taken in each of the study sites to provide a measure of the variability in particle size composition within the same gravel deposit to characterize an expected range of natural variability.
- Plot particle size composition of spawning gravel samples as cumulative distribution curves and histograms. Statistically analyze the particle size composition as represented by the D50, D16, and D84.
- Compare particle size composition and fine sediment content to standards from the scientific literature (Kondolf 1988, 2000) and, where applicable, to the relevant comparison streams.

SEDIMENT CAPTURE/DEPOSITION IN PROJECT RESERVOIRS

The capture/deposition of sediment in Project reservoirs (Waugh, Gem, and Agnew lakes) will be evaluated based on a review of existing sediment management information and data collected from field studies.

- Summarize any existing sediment management conducted by SCE Operations and Maintenance personnel.
- Map sediment facies in the exposed reservoir bed areas and determine the depth of the fine sediment deposition facies to estimate sediment volume.
- In Waugh Reservoir, use tree stump mapping (completed during implementation of the TERR 1 – Botanical Technical Study Plan [TSP]) to assist in identification of sediment deposition.

IDENTIFY FLOWS NECESSARY TO MAINTAIN GEOMORPHIC PROCESSES IN PROJECT-AFFECTED STREAM SEGMENTS

Information regarding flows that are necessary to maintain geomorphic processes in the Project-affected stream segments will be developed by comparing impaired and unimpaired hydrologic regimes and modeling sediment transport conditions under different flow regimes.

Compare Impaired and Unimpaired Hydrologic Regimes

- Compare Proposed Project, historical, existing, and unimpaired hydrologic regimes (high-flow magnitude, duration, and frequency) in Project-affected stream segments using peak flow data developed in the AQ 2 – Hydrology TSP.

Evaluate Initiation of Sediment Transport under Different Flow Regimes at Selected Stream Segment Study Sites

- Different stream reaches have different levels of hydraulic modeling (Table AQ 5-1).
  - At the locations where only sediment transport and riparian vegetation cross-sections are being modeled, select three representative cross-sections (in coordination with implementation of the AQ 1 – Instream Flow TSP and TERR 1 – Botanical TSP) and collect the following information:
    - Survey topography (including floodplain);
    - Approximate bankfull elevation, water surface elevation slope, and elevation of riparian vegetation;
    - Conduct a pebble count; and
    - Collect three water surface elevations at flows identified in AQ 1 – Instream Flow TSP.

  - At the locations where instream flow habitat modeling is proposed (multiple mesohabitats) either with cross-section or two-dimensional hydrodynamics modeling (AQ 1 – Instream Flow TSP), select three riffles and collect bankfull elevations, water surface slopes, elevations of riparian vegetation, and pebble counts. Water surface elevations will be collected as part of the AQ 1 – Instream Flow TSP.

- Identify initiation of sediment transport (motion) and bankfull flows at the study sites in the selected stream segments using the hydraulic models developed in the AQ 1 – Instream Flow TSP.

  - Derive channel hydraulic conditions, including flow depth, velocity, energy slope, and bed shear stress, from the models over a range of high flows.

  - Determine flows necessary for initiation of sediment transport (motion) using a range of critical shear stress and corresponding range of discharge values for a given particle size.

  - Estimate bankfull flow using the water surface elevations modeled over a wide range of flows at each cross-section (AQ 1 – Instream Flow TSP) and the bankfull elevations identified in the field.

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 channels from hillslope mass wasting and bank erosion processes in the Project-affected stream segments.

  - 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).

- Historic and/or ongoing erosion at the Project facilities (including Project reservoirs) will be mapped via aerial reconnaissance, ground survey, and/or aerial photography (Table AQ 5-2).

EVALUATION OF POTENTIAL RUSH CREEK CHANNEL RESTORATION IN THE FORMER LAKEBED OF WAUGH LAKE

- Coordinate with the AQ 1 – Instream Flow TSP, which includes Light Detection and Ranging (LiDAR), aerial photogrammetry, and/or total station channel surveys and hydraulic modeling of the channel in the Waugh Lake lakebed to assist in the evaluation of potential channel change related to sediment erosion/deposition.

- Use this information to assist in the evaluation of potential restoration of the Rush Creek channel within the former lakebed of Waugh Lake.

EVALUATION OF POTENTIAL ENHANCEMENT OF RUSH CREEK AND SOUTH RUSH CREEK CHANNELS NEAR SR-158

- In coordination with implementation of the TERR 1 – Botanical TSP and AQ 1 – Instream Flow TSP, characterize and map large woody debris/downed trees and riparian vegetation within the stream channels related to conveyance blockage and creation of potential flow backwater effects during high-flow events.

- Coordinate with the AQ 1 – Instream Flow TSP, which includes LiDAR, aerial photogrammetry, and/or total station surveys of the channel and hydraulic modeling of the channel to assist in development of potential enhancements (e.g., berms, channel modification, clearing of the channel) and evaluation of fluvial geomorphic change in the Rush Creek and South Rush Creek channels.

EVALUATE OF SEDIMENT DEPOSITION/TRANSPORT IN RUSH CREEK NEAR THE SILVER LAKE INLET

- Coordinate with the AQ 1 – Instream Flow TSP, which includes LiDAR, aerial photogrammetry, and/or total station surveys of the channel and hydraulic modeling of the channel to evaluate sediment scour/deposition and potential fluvial geomorphic change at the Silver Lake inlet under the Proposed Project, historical, existing, and unimpaired hydrology conditions.

REPORTING

- Study methods and results will be documented in an AQ 5 – Geomorphology Technical Study Report (TSR). The TSR 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
September–October 2022	Conduct channel surveys (e.g., mesohabitat and Rosgen mapping)
January–April 2023	Complete data analysis
April–October 2023	Conduct sediment capture/deposition surveys, sediment transport field surveys, sediment source surveys, and evaluation of potential restoration/enhancement measures in coordination with instream flow surveys
October 2023–February 2024	Analyze data and prepare draft report
March 2024	Distribute draft report to stakeholders
April–June 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table AQ 5-1. Geomorphology Study Sites.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Sampling Method
Rush Creek			
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev., sediment deposition, restoration analysis, and Project facility sediment sources
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev.
Gem Lake	0.93 (RM 19.48–20.41)	—	Sediment deposition / Project facility sediment sources
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	—	—
Agnew Lake	0.58 (RM 18.60–19.18)	—	Sediment deposition / Project facility sediment sources
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev.
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.05 / RC17.05 RM 17.55 / RC17.55	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev.
		RM 17.50–17.60 / RC17.50–17.60	Map downed trees / riparian vegetation within channel
Silver Lake	0.83 (RM 15.89–16.72)	—	—
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev.
South Rush Creek			
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15	V*, Spawning Gravel, Initiation of Motion, Bankfull Elev.
		RM 0.0–0.46 / SR0.0–0.46	Map downed trees / riparian vegetation within channel

Notes:
RM = River Mile

Table AQ 5-2. Rush Creek Project Facilities

Rush Meadows Dam Area
Dams
Rush Meadows Dam
Reservoirs
Waugh Lake
Valve House
Rush Meadows Dam Valve House
Stream Gages
Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)
Reservoir Gages
Waugh Lake (USGS No. 10287260; SCE No. 359)
Trails
Rush Meadows Dam Access Trail
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities
Rush Meadows Dam Equipment Shed
Rush Meadows Dam Gage House
Rush Meadows Dam Solar Facility
Gem Dam Area
Dams
Gem Dam
Reservoirs
Gem Lake
Flowline
Gem Dam to Agnew Junction Flowline
Valve House
Gem Valve House and Cabin
Gem Dam Arch 8 Valve House
Gem Flowline Valve House
Stream Gages
Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)
Reservoir Gages
Gem Lake (USGS No. 10287280; SCE No. 352)

Gem Dam Area (continued)
Communication Lines
Communication Line from Rush Creek Powerhouse to Gem Lake Dam
Communication Line from Gem Valve House to Arch 8 Valve House
Communication Line from Gem Tram Hoist House to Gem Valve House
Trams and Hoist Houses
Gem Tram
Gem Tram Hoist House
Gem Tram Lower/Upper Landing
Trails
Lower Gem Dam Access Trail
Gem Dam Arch 8 Access Trail
Upper Gem Dam Access Trail
Gem Dam/Lake Ancillary and Support Facilities
Gem Lake Dock
Gem Lake Motor Barge
Gem Bunkhouse
Gem Outhouse
Gem Cookhouse
Gem Dam Compressor Shed
Gem Dam Storage Shed
Gem Dam Overhead Hoist House for Dam Length
Gem Dam Overhead Hoist House
Gem Fish Release Footbridge
Gem Tram Landing Footbridge
Gem Tram Bridge
Gem Weather Station
Gem Satellite Dish
Gem Solar Facility
Gem Valve House Tunnel

Agnew Dam Area
Dams
Agnew Dam
Reservoirs
Agnew Lake
Flowline
Agnew Dam to Agnew Junction Flowline
Valve House
Agnew Junction (Valve House and Stand Pipe)
Agnew Dam Valve House
Stream Gages
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)
Reservoir Gages
Agnew Lake (USGS No. 10287285; SCE No. 351)
Power Lines
4 kV Rush Creek Powerhouse to Agnew Dam Power Line
4 kV Agnew Lake Dam Power Line
4 kV Upper Agnew Boat Dock Power Line (non-operational)
Communication Lines
Communication Line from Agnew Hoist House to Agnew Boathouse
Trams and Hoist Houses
Agnew Tram
Agnew Tram Hoist House
Agnew Tram Landing
Trails
Agnew Stream Gage Access Trail
Agnew Dam/Lake Ancillary and Support Facilities
Lower Agnew Lake Boathouse/Dock
Upper Agnew Lake Boathouse/Dock
Agnew Lake Motor Barge
Agnew Cabin
Agnew Weather Station
Agnew Flume (downstream of Agnew Dam)

Rush Creek Powerhouse Area
Penstocks
Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)
Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)
Powerhouse
Rush Creek Powerhouse
Gages
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)
Transmission Lines
2.4 kV Switchyard to Powerhouse Transmission Line
Powerhouse Ancillary and Support Facilities
Rush Creek Powerhouse Complex Access Road
Cottages (2)
Garages (4)
Warehouse and Dock
Machine Shop
Pump House
Woodshed (2)
Helicopter Landing Site
Tank (propane)
Bridge over Powerhouse Tailrace
Bridge over Rush Creek

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MAPS

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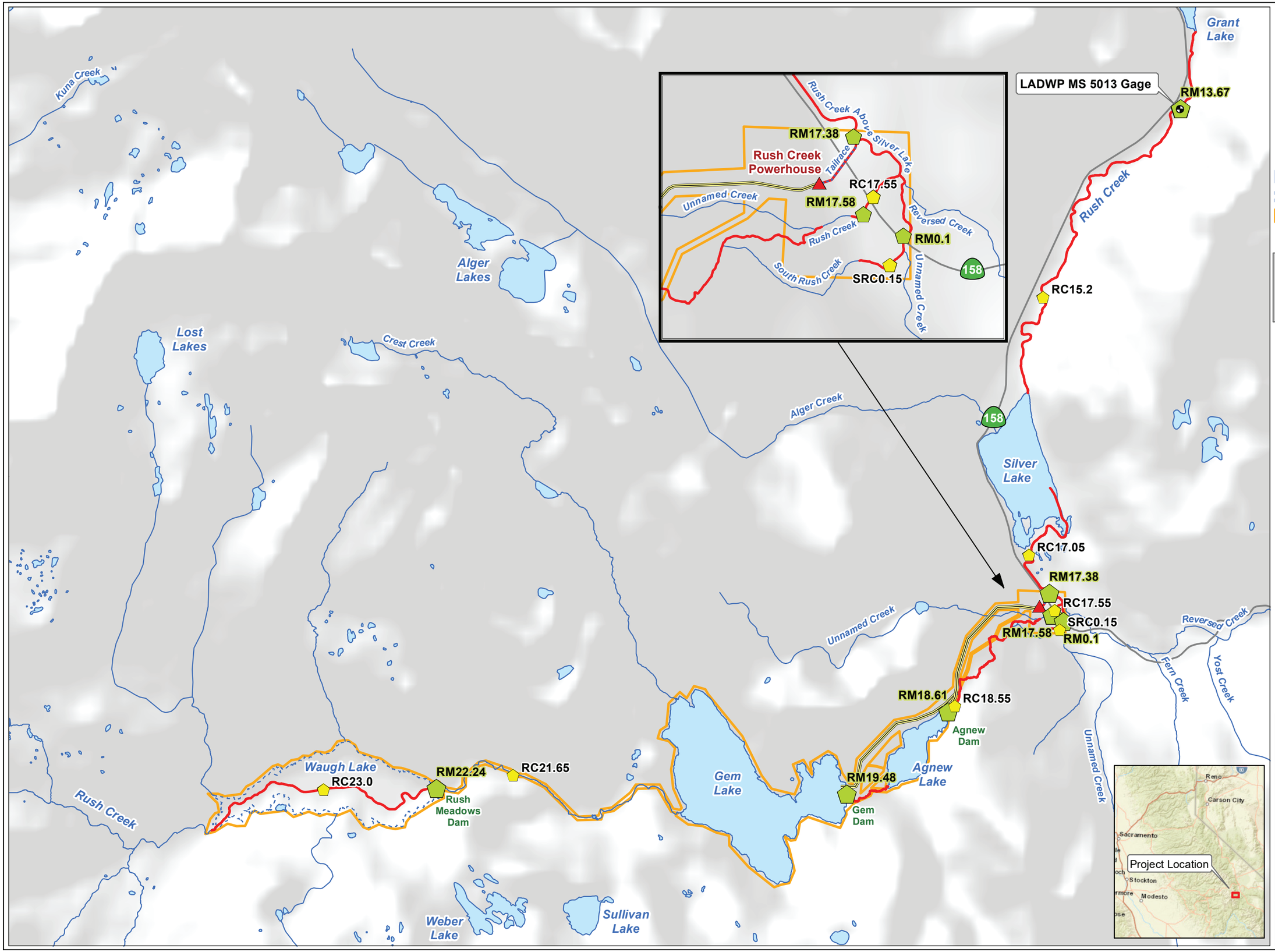

SCE Facilities
- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features
- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Study Sites and Reaches
- Hydrology Analysis Site
- Geomorphology/Riparian Site
- Instream Flow Modeling Reaches

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Rush Creek Project (FERC 1389)

Map AQ 5-1

Analysis and Survey Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/3/2021

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AQ 6 – FISH POPULATION AND BARRIERS TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 6 – Fish Population and Barriers Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Fish species composition, distribution, and abundance.
- Fish barriers/migration.

PROJECT NEXUS

- Project operations modify the flow regime in Project-affected stream segments[1] and Project reservoirs. The modified flow regime could affect the amount and distribution of fish habitat.
- Project facilities and operations may affect fish barriers/migration.

RELEVANT INFORMATION

The following information is available to characterize fish population and passage in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.5 for a summary of fish population and passage information [SCE 2021]).

- Federal Energy Regulatory Commission (FERC) Environmental Assessment for Hydropower License, Rush Creek Project, FERC Project No. 1389 (FERC 1992).
- FERC Relicensing Studies (EA Engineering Science and Technology 1986, 1987a, 1987b; Lund 1988) related to instream flows, fish entrainment mortality, fish sampling, and reservoir water quality.
- FERC Monitoring Studies (Sada 2001a, 2001b, 2003; SCE 2002; Read and Sada 2012) related to fish monitoring studies, entrainment mortality, and reservoir water quality.
- Inland fishes of California, University of California Press, Berkeley (Moyle 2002).
- California Department of Fish and Wildlife data and data sources (Eastern Sierra Back Country Fishing Guide, High Mountain Lake Project data, stocking data).

POTENTIAL INFORMATION GAPS

- Fish composition, distribution, and abundance.
- Upstream fish barriers.

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

STUDY OBJECTIVES

FISH POPULATIONS

- Document fish species composition, distribution, and relative abundance in Project-affected stream segments and Project reservoirs.

- Characterize fish growth, condition factor, and population age structure in Project-affected stream segments and Project reservoirs.

FISH BARRIERS/MIGRATION

- Document the location, nature, and characteristics of fish barriers in Project-affected stream segments.

- Identify Project facilities and operations (e.g., dam, reservoir operations, instream flow releases) that may affect fish migration.

EXTENT OF STUDY AREA

- The study area for the assessment of fish population and migration includes Project-affected stream segments and Project reservoirs.

    - Fish population sampling locations are identified in Table AQ 6-1 and Map AQ 6-1.

    - Barrier surveys will include the entire length of the Project-affected stream segments.

- 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

FISH POPULATIONS – SELECTED STREAM SEGMENTS

- The locations of selected stream segments for developing fish species composition, distribution, and relative abundance estimates (fish per mile and/or pounds [lbs.] per acre) are shown in Table AQ 6-1 and Map AQ 6-1.

- Stream sampling sites (electrofishing and/or snorkeling) will generally be a minimum of 100 meters (m) long to include multiple habitat types.

    - The AQ 5 – Geomorphology Technical Study Plan (TSP) mesohabitat mapping will be used to identify representative sampling sites with mesohabitat types in similar proportion to the larger geomorphic stream segment.

  - Where possible, sampling sites will be chosen that overlap with the instream flow study sites (see the AQ 1 – Instream Flow TSP) and/or historic fish sampling sites.

  - Table AQ 6-1 identifies the sampling location, length, and methods proposed in the selected stream segments and Project reservoirs.

- Quantitative stream sampling will be conducted during the late summer/early fall base-flow period using a combination of electrofishing (shallow water) and/or snorkeling (deep water) (Table AQ 6-1).

  - 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 selected stream segment study site. Where possible, the representative study sites will be partitioned into mesohabitat types for sampling using block nets.

  - Captured fish from each pass will be kept in separate live wells or buckets. Fish will be anesthetized (carbon dioxide [CO_2]), enumerated, identified to species, measured (fork length and weight), and scale samples will be obtained. 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.

- Snorkeling (e.g., Dolloff et al. 1996) will be used to assess fish populations in deep water habitats (≥1.5 m) at each representative study site (Table AQ 6-1).

  - Snorkeler(s) will survey in lanes along the stream to identify, count, and estimate the length of each fish observed. Fish data will be recorded by habitat unit type.

  - Snorkeling protocols and field data forms will be consistent with those in Flosi et al. (1998).

FISH POPULATIONS – PROJECT RESERVOIRS

- Characterize fish species composition, relative abundance, and size in the Project reservoirs using gillnets.

- Sample in each Project reservoir once during the late summer/early fall using variable mesh gillnets at three sampling locations in Gem Lake and two sampling locations in Agnew Lake.

  - Two nets will be placed vertically or sloping along the gradient of the reservoir bottom, depending on the depth of water, at each sampling locations.

- The sampling locations will be distributed evenly along the length of the reservoir with the goal of sampling both deep water and littoral zone habitats with one net at each location oriented perpendicular from the shore in the littoral zone, small mesh near the shore, and the other net in deeper water set vertically, small mesh near the surface (Figure AQ 6-1).

- Gillnets will be set in the afternoon of one day, and retrieved and processed the morning of the following day.

- Fish will be enumerated, weighed, and measured (fork length). Severely injured fish will be euthanized and dead fish will placed in deep water (air bladders will be punctured so the fish sink) to return the biomass back to the ecological system.

FISH BARRIERS/MIGRATION

- Identify and classify potential fish barriers in Project-affected stream segments and drawn down Project reservoirs.

  - Use the AQ 5 – Geomorphology TSP mesohabitat mapping to identify the location and nature (natural or Project-related) of potential barriers (e.g., natural falls, tributary junctions, road crossings, shallow riffles, and dams) in Project-affected stream segments and drawn down Project reservoirs.

  - Classify each potential barrier identified in the field or from aerial methods mapping (e.g., helicopter, aerial photographs) into the falls, chute, and cascade types defined by Powers and Orsborn (1985) or as critical riffles (Thompson 1972).

  - For stream road crossings, use a classification approach consistent with Flosi et al. (2010).

  - Summarize data collected at the potential fish passage barriers during field mapping or aerial methods (e.g., fall height, plunge pool depth, photographs, and field biologist observations).

  - Estimated potential for fish passage at Project-related fish barriers during the base-flow (low-flow) period using the following information:

    - The general fish barrier assessment methodology outlined in Powers and Orsborn (1985) and Thompson (1972) modified, where necessary, for the specific species (e.g., rainbow trout and brook trout) and barriers within the study area.

    - Leaping and swimming capabilities of the fish based on the literature (Powers and Orsborn 1985; Hoar et al. 1978) and fish size and water temperature information from the AQ 6 – Fish Population TSP and the AQ 3 – Water Temperature TSP.

- Physical and hydraulic characterization of potential barriers based on measurements or aerial estimates and/or Project engineering drawings.

- For stream road crossings, evaluate fish migration consistent with Flosi et al. (2010).

REPORTING

GENERAL

- Study methods and results will be documented in an AQ 6 – Fish Population and Barriers Technical Study Report (TSR). The TSR 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).

FISH POPULATION – SELECTED STREAM SEGMENTS

- Summarize fish standing crop estimates for each species at each study site in terms of density (e.g., fish/feet^2 and fish/mile) and biomass (lbs/acre and lbs/mile).

- Identify appropriate fish standing crop comparison datasets in collaboration with interested resource agencies.

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

- Develop length frequency histograms of sampled fish and examine distribution modality, in conjunction with scale data, to determine the age structure of fish populations.

- Summarize fish growth and age data using length frequency and scale analysis.

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

FISH POPULATION – PROJECT RESERVOIRS

- Summarize fish composition, size, and relative abundance in each Project Reservoir.

FISH BARRIERS/MIGRATION

- Provide description and map of potential fish barriers in Project-affected stream segments.

SCHEDULE

Date	Activity
June–September 2023	Characterize fish barriers/migration in Project-affected stream segments
August–October 2023	Conduct fish population sampling in Project-affected stream segments and Project reservoirs
October 2023–February 2024	Analyze data and prepare draft report
March 2024	Distribute draft report to stakeholders
April–June 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table AQ 6-1. Fish Population Sampling Locations.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID	Site Length[a] (meters [m])	Sampling Method
Rush Creek				
Rush Creek Above Waugh Lake (reference reach)	0.5 (RM 23.8–24.3)	RM 23.9 / RC23.9	100 m	Electrofishing/ Snorkeling
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0	100 m	Electrofishing/ Snorkeling
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65	100 m	Electrofishing/ Snorkeling
Gem Lake	0.93 (RM 19.48–20.41)	Three Sampling Locations (determined in field)	—	Gillnets
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	—	—	—
Agnew Lake	0.58 (RM 18.60–19.18)	Two Sampling Locations (determined in field)	—	Gillnets
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55	100 m	Electrofishing/ Snorkeling
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—	—	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.05 / RC17.05 RM 17.55 / RC17.55	100 m each site	Electrofishing/ Snorkeling
Silver Lake	0.83 (RM 15.89–16.72)	—	—	—
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2	100 m	Electrofishing/ Snorkeling
South Rush Creek				
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15	100 m	Electrofishing/ Snorkeling

Notes:
m = meters
RM = River Mile

[a] Sampling in reservoir and lakes is measured in terms of effort - placement of overnight gillnets at three locations in Gem and two locations in Agnew.

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FIGURES

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Figure AQ 6-1. Gillnet Fish Sampling Locations.

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MAPS

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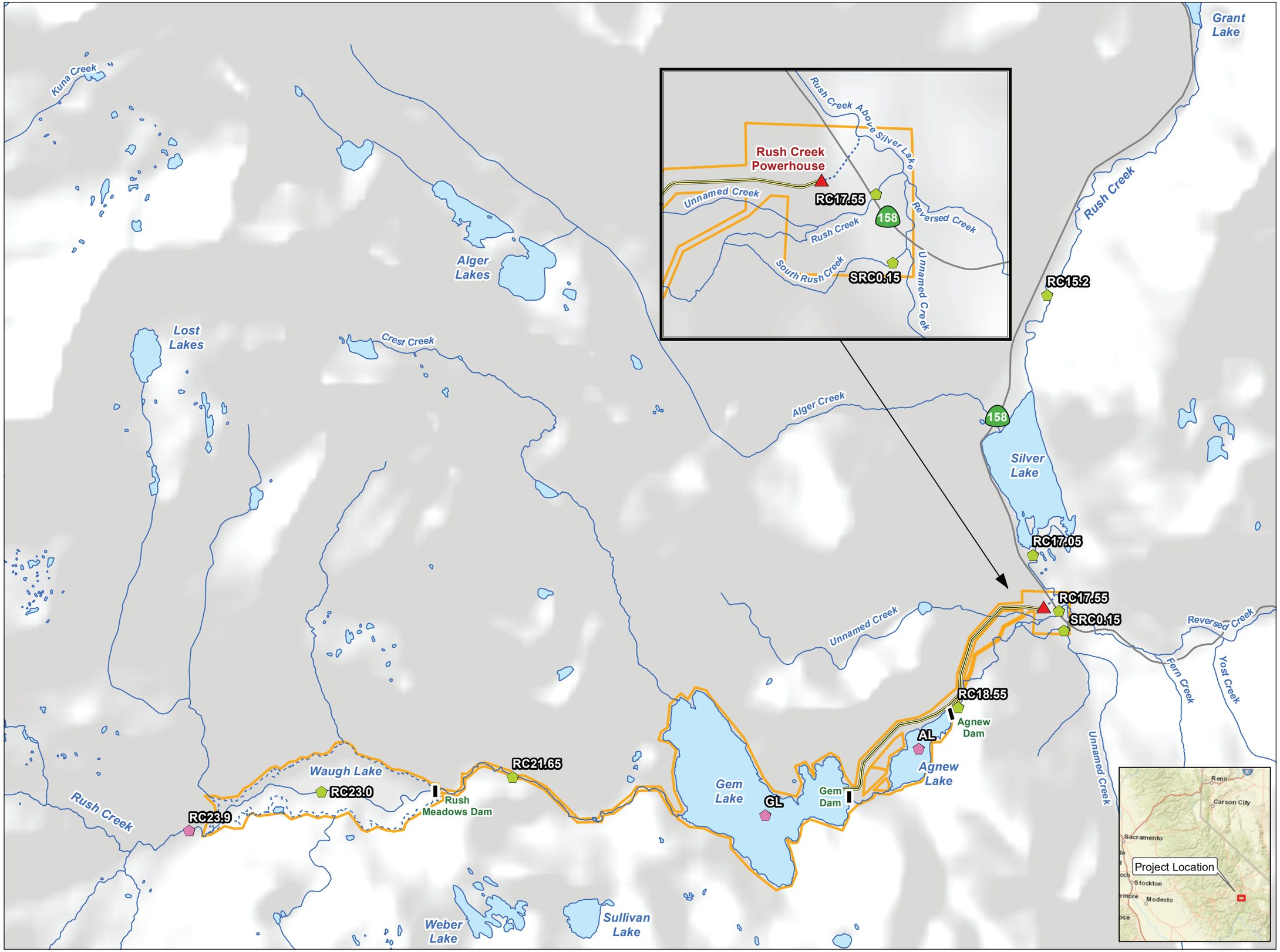

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Sampling Locations

- Fish Population
- Fish Population, Amphibians

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Rush Creek Project (FERC 1389)

Map AQ 6-1

Sampling Locations

0 0.25 0.5 Miles

Date: 11/3/2021

Projection: UTM Zone 11
Datum: NAD 83

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AQ 7 – SPECIAL-STATUS AMPHIBIANS TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

AQ 7 – Special-Status Amphibians Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Special-status amphibians and their habitats.

PROJECT NEXUS

- Direct loss or degradation of habitat.
- Disturbance or direct loss of special-status amphibians.

RELEVANT INFORMATION

The following information is available regarding special-status amphibians in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.5 for a summary of fish and aquatic resource information, including special-status amphibians [SCE 2021]):

- Floodplain, littoral zones, and associated wetland and riparian habitats present at Project reservoirs and Project-affected stream segments[1] (SCE's PAD Section 4.9, Riparian; SCE 2021).
- Known occurrences of special-status amphibians in the vicinity of the Project based on the California Natural Diversity Database (CNDDB) (CDFW 2020); California Department of Fish and Wildlife (CDFW) High Mountain Lake (HML) Rush Creek Management Unit, Herps Dataset (CDFW 2016); U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPac) (USFWS 2020); and U.S. Forest Service (Forest Service) Natural Resource Information System observation data (Forest Service 2017).
- Critical Habitat located in/near the Federal Energy Regulatory Commission (FERC) Project boundary for the Sierra Nevada Yellow-legged Frog (SNYLF) and the Yosemite toad (YT), as shown on Map AQ 7-1 (USFWS 2016).
- Supplemental information (e.g., habitat descriptions and special-status species occurrences) from the following Project-specific sources:
  - FERC's Environmental Assessment for the Rush Creek Project (FERC Project No. 1389) (FERC 1992);
  - SCE's Survey Report for Phase I and Phase II Projects (SCE 2017, 2018); and
  - SCE's Survey Report for the Gem Dam Valve Upgrade (SCE 2020).

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study and/or due to fluvial geomorphology (e.g., stream gradient, channel confinement).

POTENTIAL INFORMATION GAPS

- Updated information on potential SNYLF habitat, including Primary Constituent Elements (PCE).
- Information on the presence of SNYLF within potential breeding habitat.
- Updated information on potential YT habitat, including PCEs.
- Information on the presence of YT within potential breeding habitat.

STUDY OBJECTIVES

- Identify and map potential habitat (including PCEs) for SNYLF and YT.
- Conduct visual encounter surveys (VES) to determine the presence of SNYLF and YT.

EXTENT OF STUDY AREA

- Refer to Map AQ 7-2 for the special-status amphibian study area. The study area for:
  - Documentation of SNYLF habitat (including PCEs) includes areas within, and/or immediately adjacent to, Project-affected stream segments, Project reservoirs, and the potential enhancement area (i.e., portions of the Lower Rush Creek and South Rush Creek).[2]
  - SNYLF VES includes select stream reaches (i.e., sampling locations)[3] (Table AQ 7-1), and meadows and meadow systems adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area.
    - If the selected stream reaches do not contain suitable habitat (PCEs), the sampling sites will be moved to another location (within the Project-affected stream segment) which contains suitable habitat/PCEs.
  - Documentation of YT habitat (including PCEs) includes meadows and meadow systems adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area.

[2] The potential enhancement area includes portions of the Rush Creek and South Rush Creek channels upstream and downstream of the State Route 158 crossing. The purpose of the potential enhancement is to address local flooding of residences during high-flow events. Refer to Map AQ 3-5.

[3] Reaches as used in this document are shorter sections of river within a longer stream segment (length of stream with homogeneous flow) that are delineated due to differences in fluvial geomorphology (e.g., stream gradient, channel confinement) or locations selected for collecting study data (i.e., sampling locations).

  - YT VES includes meadows and meadow systems adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area that contain suitable habitat (PCEs).

- 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

For the purposes of this study, special-status amphibians include SNYLF (Federal Endangered, State Threatened) and YT (Federal Threatened, California Species of Special Concern). The study approach for special-status amphibians is provided below.

SIERRA NEVADA YELLOW-LEGGED FROG

- Prepare preliminary maps of potential SNYLF breeding/rearing, overwintering, and dispersal habitat in the study area, based on existing data and agency habitat definitions.

- Conduct a field survey to document the presence of PCEs (as defined by USFWS [2016]) within potential SNYLF habitat in the study area.

- Develop a Geographic Information System (GIS) map of habitat and overlay information on Project facilities, construction areas, restoration areas, and the potential enhancement area.

- Conduct VES to determine the presence of SNYLF in the study area.

- Surveys will be conducted consistent with the Standardized Protocol for Surveying Aquatic Amphibians (Fellers and Freel 1995).

  - Two diurnal visits will be completed in the period between the onset of the breeding season (shortly after snowmelt) and when tadpoles are beginning to metamorphose (late summer).

  - Surveys will follow the visual search methods.

    - Binoculars will be used to scan aquatic habitats for individuals while walking slowly. The banks, rocks, logs, bottom, surface, and any floating vegetation will be scanned for the presences of SNYLF.

    - After walking 10–15 meters (33–49 feet), biologists will stop and scan ahead with binoculars before advancing further.

    - Adjacent meadows will be surveyed by walking slowly along the main channel and circling all potholes and pools of water.

  - An SNYLF survey datasheet will be completed for each study site. A copy of the datasheet is provided as Attachment 1.

  - If SNYLF 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. CDFW will also be notified of any SNYLF observations.

  - For all SNYLF 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 the location of SNYLF.

- If occupied breeding/rearing habitat for SNYLF is identified in the selected stream segments evaluated as part of implementation of the AQ 1 – Instream Flow Technical Study Plan (TSP), quantification of habitat versus flow relationships will be developed.

- Incidental sightings of SNYLF observed during implementation of other technical studies will be recorded and reported to CDFW.

YOSEMITE TOAD

- Prepare preliminary maps of potential YT breeding/rearing, overwintering, and dispersal habitat in the study area.

- Conduct a field survey to document the presence of PCEs (as defined by USFWS [2016]) within potential YT habitat within the study area.

- Develop a GIS map of YT habitat and overlay information on Project facilities, construction areas, restoration areas, and the potential enhancement area.

- Conduct VES to determine the presence of YT within potential breeding habitat (e.g., meadows and meadows systems) in the study area.

- Surveys will be conducted consistent with the *Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement – Record of Decision Attachment D* (ROD Attachment D; Forest Service 2004).

  - Surveys will be timed to maximize the detection of tadpoles (when they are large enough to identify easily).

  - Two diurnal visits will be completed during the period beginning shortly after snowmelt and ending approximately 6 to 8 weeks into the summer.

- Surveys will follow the visual search methods.
  - Binoculars will be used to scan aquatic habitats for individuals while walking slowly along mainstream channels and circles all potholes and pools of water (including shallow pools and seeps as shallow as 2 centimeters [0.78 inch] deep).
  - When not following an obvious channel, a zig-zag path through meadows (with 10-meter [32-foot] wide sweeps) may be utilized.
- A YT survey datasheet will be completed for study site. A copy of the datasheet is provided as Attachment 2.
- If YT are observed, the individual or populations will be documented and recorded with a GPS unit, photographed, and a photograph of the habitat where the individual/population is observed will be obtained. CDFW will also be notified of any YT observations.
- For all YT 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 the location of YT.

- Incidental sightings of YT observed during implementation of other technical studies, will be recorded and reported to CDFW.

REPORTING

- Study methods and results will be documented in an AQ 7 – Special-Status Amphibians Technical Study Report (TSR). The TSR 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
June–August 2023	Complete habitat mapping and conduct VES surveys
September–December 2023	If occupied breeding/rearing habitat for SNYLF is identified in stream segments evaluated as part of implementation of the AQ 1 – Instream Flow TSP, quantification of habitat versus flow relationships will be developed
December 2023–February 2024	Analyze data and prepared draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)

Date	Activity
May–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table AQ 7-1. Special-Status Amphibian Sampling Locations.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID
Rush Creek		
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65
Gem Lake	0.93 (RM 19.48–20.41)	—
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	—
Agnew Lake	0.58 (RM 18.60–19.18)	—
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.05 / RC17.05 RM 17.55 / RC17.55
Silver Lake	0.83 (RM 15.89–16.72)	—
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2
South Rush Creek		
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15

Notes:
RM = River Mile

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MAPS

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Alger Creek
Crest Creek
Silver Lake
Rush Creek Powerhouse Landing Site
Rush Creek Powerhouse
Rush Creek
Agnew Dam
Agnew Lake
Gem Lake
Gem Dam
Waugh Lake
Rush Meadows Dam
Rush Creek

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Stream Gage
- Reservoir Gage
- Helicopter Landing Site
- Power Line
- Communication Line
- Tramway
- FERC Boundary

Other Features

- Highway
- River/Stream
- Lake
- Dry Lake/Reservoir

Final Critical Habitat*

- Sierra Nevada Yellow-Legged Frog[1]
- Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1] The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

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Rush Creek Project (FERC 1389)

Map AQ 7-1

SNYLF and YT Critical Habitat in/near the FERC Project Boundary

0 0.125 0.25 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/17/2022

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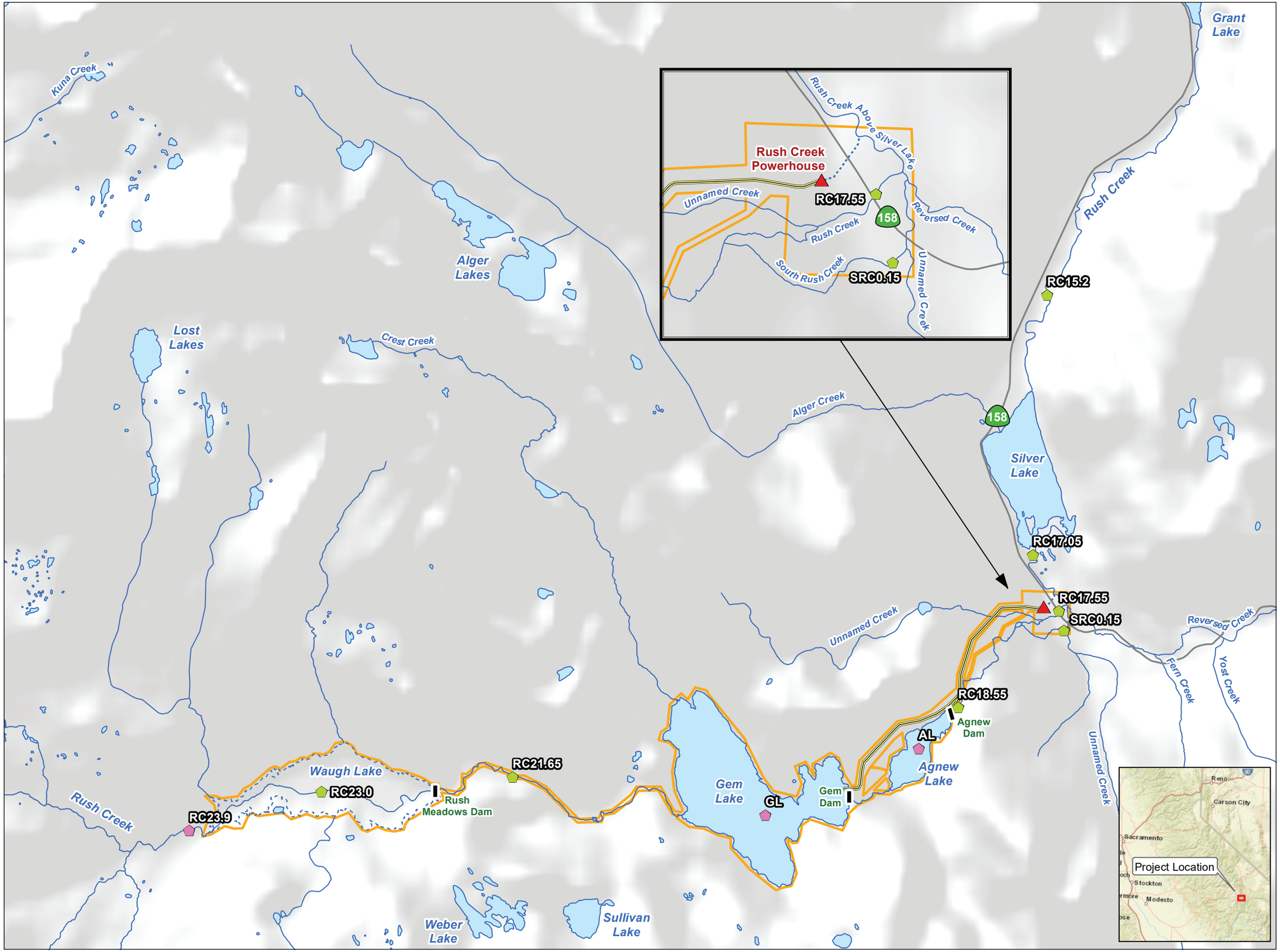

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Sampling Locations

- Fish Population
- Fish Population, Amphibians

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Rush Creek Project (FERC 1389)

Map AQ 7-2

Sampling Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/3/2021

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ATTACHMENT 1

Sierra Nevada Yellow-legged Frog Datasheet

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Aquatic Survey Data Sheet

Site: _____

Date: (mm-dd-yy)	Begin Time:	Total Time: min	Observer(s): 1 2 3 4
Locality:			Owner: ? NPS FS BLM St. Pvt. Oth.
County:	Elevation: m ft	North UTM: GPS Map	East UTM: 10 3 4 5 6 7 8 11
Topographic Map: 7.5' 15'		North UTM: GPS Map	East UTM: 10 3 4 5 6 7 8 11
Distance to Mapped trail: km	Distance to Public dirt road: km	Distance to Public paved road: km	

Weather: Clear Pt. Cloudy	Overcast Mostly Cloudy	Rain Snow	Wind: (mph) 0 < 5	5 - 20 > 20	Air Temp.: (at 1 m) C F	Water Temp.: (0.5 m out) C F

Habitat: Natural 1 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring	Drainage: Permanent Seasonal

Site Length: m	Aver. Width: m	Aver. Depth: m	Max. Depth: m	Water Flow sec./10 ft. 0 < 7 sec. 7-11 sec. >11 sec.
Water Turbidity: Clear 1 2 3 4 5 Turbid	Mid-day Shade: %	Emergent Vegetation: %	Floating Vegetation: %	
Water-shed: ____ Natural ____ Urban ____ Grazed ____ Agricul. ____ Logged (last 15 yr.) ____ Other _____	Substrate: ____ Silt ____ Bedrock ___ < 2 mm ___ 2 - 75 mm ____ 75 - 300 mm ____ >300 mm			
Predominant Vegetation:				

Fishing Tackle: Yes No	Fish Present: Yes No ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo

Site: _____ Date: _____

	Species	Tiss.	Sex	Weight (g)	Length (cm)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

	Species	Tiss.	Sex	Weight (g)	Length (cm)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Comments:

Return to: Dr. Gary M. Fellers, National Biological Service, Point Reyes National Seashore, Point Reyes, CA 94956

Revised: April 1995

ATTACHMENT 2

Yosemite Toad Datasheet

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Yosemite Toad Data Sheet

Date: __________(mm/dd/year) Observers ____

Location Information:

Location Description: ___________________________________ Elevation:_____________feet or meters

R5 ID#: Meadow #: Meadow/Lake Name:

Meadow Type: Meadow/Lake Acres:

Wilderness: Allotment:

Subwatershed #: Quad Map #:

Township: Range: Section:

GPS Coordinates - center of meadow: **NAD 83 Accuracy: + - ________ ft or m**

East UTM: North UTM

East UTM: _______________________________ North UTM: ________________________________

Survey Information:

Survey Start Time: _________ am or pm

Survey End Time: _________ am or pm

Survey Total Time: _________ minutes

Weather (circle all that apply): clear partly-cloudy cloudy light-rain heavy-rain snow no-wind light-wind very-windy

Temperature - Air Start: _________ (C)

Temperature - Air End: __________ (C)

Temperature - Water Start: _________ (C)

Temperature - Water End: __________ (C)

Habitat Information:

Water Present? Yes or No Ephemeral or Intermittent or Perennial?

% of Meadow Wet: ______________ % Slope of Meadow: _____________

Fish Present? Yes or No Signs of Cattle? Yes or No Signs of Packstock? Yes or No

Comments about habitat condition: ____

____

____

____

____

____

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________
____________	*E / T / J / A / M*	____	*M / F*	*Visual / Call*	*Y / N*	_____________________

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CUL 1 – BUILT ENVIRONMENT TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

CUL 1 – Built Environment Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Built environment historic properties affected by the Project.

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 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.

- Alteration to the contributing resources of a National Register of Historic Places (NRHP) historic district including the Rush Creek Hydroelectric System Historic District.

RELEVANT INFORMATION

The following information is available regarding built environment cultural resources and historic properties in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.13 for a summary of available cultural resource information [SCE 2021]):

- California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) Records Search, received on March 16, 2021. 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).

- Management Plan for Historic and Archaeological Resources Associated with the Rush Creek Hydroelectric Project, (FERC Project No. 1389), Mono and Inyo Counties, California (SCE 1990). The Management Plan provides documentation and background information on the known historic properties in the Project Boundary and current SCE responsibilities and requirements for managing historic properties.

- "Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project No. 1388) and Rush Creek (FERC Project No. 1389) Hydroelectric Systems, Mono County, California" (Williams and Hicks 1989). This Evaluation Report details the NRHP criteria and themes of significance for the previously documented Rush

Creek Hydroelectric System Historic District, eligible for the NRHP and a historic property under Section 106 of the NHPA.

- Historic American Engineering Record (HAER) CA-166-A, Rush Creek Hydroelectric System, Powerhouse Exciters (Building 101) (Taylor 1995).
- HAER CA-166-B, Rush Creek Hydroelectric System, Worker Cottage Building 103 (Taylor 1997a).
- HAER CA-166-C, Rush Creek Hydroelectric System, Worker Cottage Building 104 (Taylor 1997b).
- HAER CA-166-D, Rush Creek Hydroelectric System, Worker Cottage Building 105 (Taylor 1997c).
- HAER CA-166-E, Rush Creek Hydroelectric System, Clubhouse Cottage Building 108 (Taylor 1997d).
- HAER CA-166-F, Rush Creek Hydroelectric System, Agnew Lake Dam (Weintraub 2013a).
- HAER CA-166-G, Rush Creek Hydroelectric System, Gem Lake Dam (Weintraub 2013b).
- HAER CA-166-H, Rush Creek Hydroelectric System, Rush Creek Meadows Dam (Weintraub 2013c).
- Agnew Tram Documentary Film filed with California Office of Historic Preservation and Inyo National Forest (INF) (https://www.archaeologychannel.org/video-guide/video-guide/video-guide-list/2510-agnew-tramway.

POTENTIAL INFORMATION GAPS

- Updated physical documentation and information on known built environment cultural resources located within the Area of Potential Effects (APE).
- Intensive 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 the Proposed Project (Undertaking).
- Updated NRHP evaluation of the Rush Creek Hydroelectric System 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

- Identify 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 potential actions implemented in the Proposed 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 FERC Project boundary (Map CUL 1-1).

    - This study area will be used 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 entire area within the FERC Project boundary (Map CUL 1-1).

    - Rush Creek Project facilities are identified in Table CUL 1-1. All Project facilities will be considered as part of study implementation as part of the study survey population. Detailed maps showing the location of Project facilities are available in Section 2.0 of SCE's PAD for the Rush Creek Project (SCE 2021).

- 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 interested stakeholders, if any refinement/modification of the Proposed Project results in utilizing additional lands outside the FERC Project boundary or current APE.

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 stakeholders 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 State Historic Preservation Officer (SHPO) and interested stakeholders 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 FERC Project boundary.

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 American's who contributed to construction and operation of the historic hydroelectric system. This research will utilize and build upon the existing studies documenting the Project APE, most notably, "Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project No. 1388) and Rush Creek (FERC Project No. 1389) Hydroelectric Systems, Mono County, California" (Williams and Hicks 1989), to support necessary NRHP evaluation and update evaluation of built environment 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 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
    - Mono Basin Historical Society, Lee Vining
    - Mono Basin History Museum
    - Mono County (Official Records, Bridgeport)
    - Mono County Historical Society
    - Online research, including general and engineering periodicals

- Records of the United States Forest Service (Forest Service), Inyo National Forest (INF), Bishop
- SCE Engineering Drawings
- United States Geological Survey (USGS) Historical Topographic Map Collection
- Other data repositories as identified through the research program

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 historic period built environment resources 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 identified during the study as a system/district, as well as on an individual basis.
- Create record updates for resources already determined eligible for the NRHP to ensure there are no data gaps related to integrity or status of built environment resources as historic properties under Section 106 of the NHPA.

NRHP EVALUATION ELIGIBILITY

- Evaluate historic period built environment resources in the Project APE for eligibility to the NRHP under the criteria for listing. Evaluation will include consideration of both individual eligibility and eligibility as a multi-component district.
- Updated evaluation will consider previous recordation of the Rush Creek Hydroelectric System Historic District (Williams and Hicks 1989). Evaluation will include any Rush Creek Project facilities that may not have been evaluated during the previous relicensing effort.
- Evaluation 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 from the Built Environment Technical Study will be documented in a *CUL 1 – Built Environment Technical Study Report* (TSR). To ensure compliance with FERC reporting requirements and with the standards of Section 106 of the NHPA, the TSR 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 TSR 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 all 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 TSR will be distributed to interested stakeholders for review and comment. Comments on the Draft TSR will be addressed in a Final TSR, 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.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will develop a Historic Properties Management Plan (HPMP) that utilizes the analysis and results of the TSP 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

Date	Activity
February–May 2022	Convene interested stakeholders to discuss Draft Study Plan and adequacy of the APE
March–May 2022	Consult with SHPO regarding adequacy of the APE
January–May 2023	Conduct archival research and background review
June–September 2023	Conduct field inventory
October 2023–January 2024	Analyze data and prepare draft TSR
January 2024	Distribute draft TSR to stakeholders
February–April 2024	Stakeholder review and provide comments on draft TSR (90 days)
April–June 2024	Resolve comments and prepare final TSR
April–August 2024	Develop Draft HPMP
August 2024	Distribute final TSR and Draft HPMP in Draft License Application

REFERENCES

CHRIS (California Historical Resources Information System) Eastern Information Center Records Search. March 2021.

FERC (Federal Energy Regulatory Commission). 2002. Issuance of Guidelines for the Development of Historic Properties Management Plans (accessed online at Issuance of Guidelines for the Development of Historic Properties Management Plans (ferc.gov), August 7, 2021).

NPS (National Park Service). 1995. NRHP Bulletin 15: How To Apply the NRHP Criteria for Evaluation (accessed online at National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation (nrc.gov), August 7, 2021).

SCE (Southern California Edison Company). 1990. Management Plan for Historic and Archaeological Resources Associated with the Rush Creek Hydroelectric Project, (FERC Project No. 1389), Mono and Inyo Counties, California. April 1990.

——. 2021. Rush Creek Project (FERC Project No. 1389) Pre-Application Document. December.

Taylor, Thomas T. 1995. HAER CA-166-A, Rush Creek Hydroelectric System, Powerhouse Exciters.

——. 1997a. HAER CA-166-B, Rush Creek Hydroelectric System, Worker Cottage Building 103.

——. 1997b. HAER CA-166-C, Rush Creek Hydroelectric System, Worker Cottage Building 104.

——. 1997c. HAER CA-166-D, Rush Creek Hydroelectric System, Worker Cottage Building 105.

——. 1997d. HAER CA-166-E, Rush Creek Hydroelectric System, Clubhouse Cottage Building 108.

Weintraub, Matthew. 2013a. HAER CA-166-F, Rush Creek Hydroelectric System, Agnew Lake Dam.

——. 2013b. HAER CA-166-G, Rush Creek Hydroelectric System, Gem Lake Dam.

——. 2013c. HAER CA-166-H, Rush Creek Hydroelectric System, Rush Meadows Dam.

Williams, James C., Hicks, Robert A. 1989. Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project No. 1388) and Rush Creek (FERC Project No. 1389) Hydroelectric Systems, Mono County, California. Submitted to Environmental Affairs Division, Southern California Edison Company, Rosemead, California. July 1989.

TABLES

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Table CUL 1-1. Rush Creek Project Facilities

Rush Meadows Dam Area
Dams
Rush Meadows Dam
Reservoirs
Waugh Lake
Valve House
Rush Meadows Dam Valve House
Stream Gages
Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)
Reservoir Gages
Waugh Lake (USGS No. 10287260; SCE No. 359)
Trails
Rush Meadows Dam Access Trail
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities
Rush Meadows Dam Equipment Shed
Rush Meadows Dam Gage House
Rush Meadows Dam Solar Facility
Gem Dam Area
Dams
Gem Dam
Reservoirs
Gem Lake
Flowline
Gem Dam to Agnew Junction Flowline
Valve House
Gem Valve House and Cabin
Gem Dam Arch 8 Valve House
Gem Flowline Valve House
Stream Gages
Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)
Reservoir Gages
Gem Lake (USGS No. 10287280; SCE No. 352)

Gem Dam Area (continued)
Communication Lines
Communication Line from Rush Creek Powerhouse to Gem Lake Dam
Communication Line from Gem Valve House to Arch 8 Valve House
Communication Line from Gem Tram Hoist House to Gem Valve House
Trams and Hoist Houses
Gem Tram
Gem Tram Hoist House
Gem Tram Lower/Upper Landing
Trails
Lower Gem Dam Access Trail
Gem Dam Arch 8 Access Trail
Upper Gem Dam Access Trail
Gem Dam/Lake Ancillary and Support Facilities
Gem Lake Dock
Gem Lake Motor Barge
Gem Bunkhouse
Gem Outhouse
Gem Cookhouse
Gem Dam Compressor Shed
Gem Dam Storage Shed
Gem Dam Overhead Hoist House for Dam Length
Gem Dam Overhead Hoist House
Gem Fish Release Footbridge
Gem Tram Landing Footbridge
Gem Tram Bridge
Gem Weather Station
Gem Satellite Dish
Gem Solar Facility
Gem Valve House Tunnel

Agnew Dam Area
Dams
Agnew Dam
Reservoirs
Agnew Lake
Flowline
Agnew Dam to Agnew Junction Flowline
Valve House
Agnew Junction (Valve House and Stand Pipe)
Agnew Dam Valve House
Stream Gages
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)
Reservoir Gages
Agnew Lake (USGS No. 10287285; SCE No. 351)
Power Lines
4 kV Rush Creek Powerhouse to Agnew Dam Power Line
4 kV Agnew Lake Dam Power Line
4 kV Upper Agnew Boat Dock Power Line (non-operational)
Communication Lines
Communication Line from Agnew Hoist House to Agnew Boathouse
Trams and Hoist Houses
Agnew Tram
Agnew Tram Hoist House
Agnew Tram Landing
Trails
Agnew Stream Gage Access Trail
Agnew Dam/Lake Ancillary and Support Facilities
Lower Agnew Lake Boathouse / Dock
Upper Agnew Lake Boathouse / Dock
Agnew Lake Motor Barge
Agnew Cabin
Agnew Weather Station
Agnew Flume (downstream of Agnew Dam)

Rush Creek Powerhouse Area
Penstocks
Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)
Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)
Powerhouse
Rush Creek Powerhouse
Gages
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)
Transmission Lines
2.4 kV Switchyard to Powerhouse Transmission Line
Powerhouse Ancillary and Support Facilities
Rush Creek Powerhouse Complex Access Road
Cottages (2)
Garages (4)
Warehouse and Dock
Machine Shop
Pump House
Woodshed (2)
Helicopter Landing Site
Tank (propane)
Bridge over Powerhouse Tailrace
Bridge over Rush Creek

MAPS

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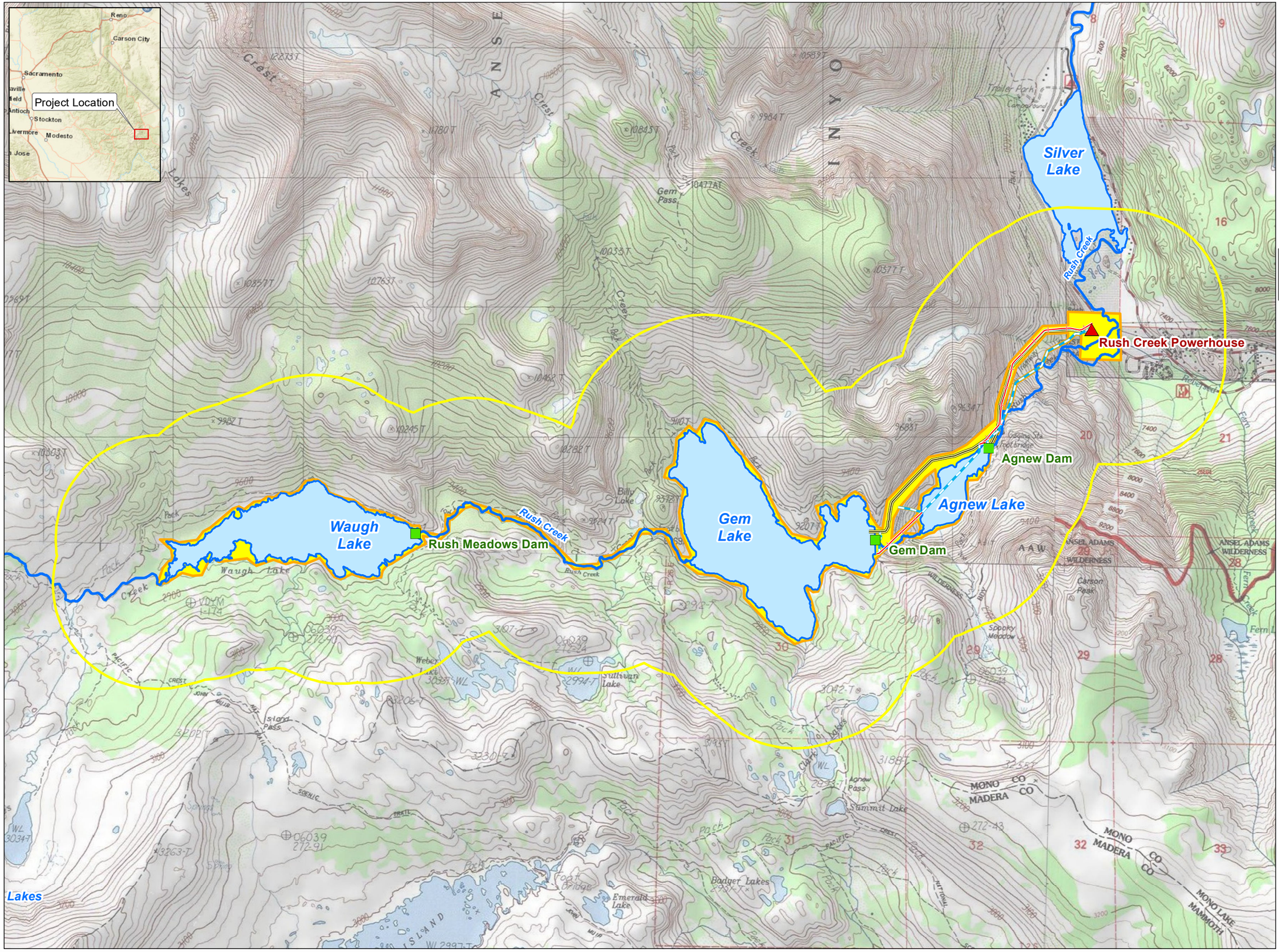

SCE Facilities

- Powerhouse
- Dam
- Flowline / Penstock
- Power or Communication Line
- Tramway
- FERC Project Boundary

Other Features

- Rush Creek
- Lake

Cultural Data

- Area of Potential Effects (APE)
- Study Area

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Rush Creek Project (FERC 1389)

Map CUL 1-1

Built Environment APE and Study Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 3/24/2022

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CUL 2 – ARCHAEOLOGY
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

CUL 2 – Archaeology Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Archaeological resources and other historic properties within the Project's Area of Potential Effect (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.

Proposed Project activities could potentially affect archaeological resources by:

- Endangering 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 Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.13 for a summary of available archaeological resource information [SCE 2021]):

- California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) Records Search, received on March 16, 2021. 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 6, 2020 (NAHC 2020). The NAHC SLF provides an inventory of Native American resources and sacred sites.

- "Archaeological Data Recovery Program Rush Meadow Archaeological District, Ansel Adams Wilderness, Inyo National Forest (INF), California" (Thomas Jackson 1999). Additional archaeological data recovery report for sites inundated by Rush Meadows Reservoir.

- "Archaeological Data Recovery Program - Rush Meadow. Investigations at CA-MNO-2440/H, MNO-2459, MNO-2460, MNO-2461, and MNO-2463" (Thomas Jackson 1997). Archaeological data recovery report for sites inundated by Rush Meadows Reservoir.

- Management Plan for Historic and Archaeological Resources Associated with the Rush Creek Hydroelectric Project, (FERC Project No. 1389), Mono and Inyo Counties, California (SCE 1990). 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.

- "Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project No. 1388) and Rush Creek (FERC Project No. 1389) Hydroelectric Systems, Mono County, California" (William and Hicks 1989). This Evaluation Report details the NRHP criteria and themes of significance for the previously documented Rush Creek Hydroelectric System Historic District, eligible for the NRHP and a historic property under Section 106 of the NHPA.

- Background studies include several major archaeological overviews and studies conducted in the Mono Basin, Long Valley and broader region by E.L. Davis (1964), Bettinger (1982), Busby et al. (1979), and Jackson's (1985) survey reports for timber compartments on the United States Forest Service (Forest Service) INF.

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 the Proposed Project (Undertaking).

- Updated NRHP evaluation and condition assessment of the Rush Meadows Archaeological District (RMAD).

STUDY OBJECTIVES

- Identify all known and currently undocumented archaeological resources within the APE.

- Evaluate or, as appropriate, provide update evaluation under the criteria of the NRHP for archaeological resources in the APE to determine whether archaeological resources may be affected by potential actions implemented in the Proposed Project.

EXTENT OF STUDY AREA AND AREA OF POTENTIAL EFFECT

- For archaeological resources, the study area includes the area within 0.5 mile of the FERC Project boundary (Map CUL 2-1).

    - This study area will be used 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; and
  - Include cumulative effects that may result from the undertaking.
- The proposed APE for the purposes of study implementation is defined as the entire area within the FERC Project boundary (Map CUL 2-1).
- 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 interested stakeholders, if any refinement/modification of the Proposed Project results in utilizing additional lands outside the FERC Project boundary or current APE.

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 stakeholders. Specific tasks that will be implemented during each step are described below.

ESTABLISH APE

- Submit the proposed APE to on the behalf of FERC to the Tribes, the State Historic Preservation Officer (SHPO), and interested stakeholders 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 FERC Project boundary.

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
    - EIC, University of California Riverside
    - Huntington Library, SCE Records, and Photographs and Negatives, San Marino
    - Maturango Museum, Ridgecrest
    - Mono Basin Historical Society, Lee Vining
    - Mono County (Official Records, Bridgeport)
    - Native American Heritage Commission
    - Paiute-Shoshone Cultural Center, Bishop
    - Records of the United States Forest Service (Forest Service), INF, Bishop
    - Southern California Edison Archaeological Records
    - Southern Mono Historical Society, Mammoth Lakes
    - UCLA Fowler Museum, Los Angeles
    - University of Nevada, Reno, Special Collections
    - Yosemite National Park Archives, El Portal
    - 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 and to examine all accessible lands not previously surveyed 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.

- Tribes will be invited to participate in archaeological inventory.

- Previously recorded archaeological sites 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, 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.

- Field personnel will use a Global Positioning System (GPS) receiver to document the location of archaeological resources (including isolates), 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 INF 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 INF lands will require valid Organic Act permits. Any ground disturbing testing that occurs on INF 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 INF 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 INF according to stipulations in the archaeological permit.

NRHP ELIGIBILITY EVALUATION

- NRHP evaluations will focus on resources that may be adversely affected by proposed activities. The inventory and evaluation strategy will be developed in consultation with the INF, Tribes, and interested stakeholders. Applicable archaeological permits will be obtained from the INF.

- Tribes will be invited to participate in archaeological evaluations.

- 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 from the Archaeology Technical Study will be documented in a *CUL 2 – Archaeology Technical Study Report* (TSR). To ensure compliance with FERC reporting requirements and with the standards of Section 106 of the NHPA, the TSR 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 TSR 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 TSR;

    - 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 TSR will be distributed to qualified stakeholders 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 TSR will be addressed in a final TSR, which will be included in the Draft License Application.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will develop a Historic Properties Management Plan (HPMP) that utilizes the analysis and results of the Technical Study Plan (TSP) 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

Date	Activity
February–April 2022	Convene interested stakeholders to discuss Draft Study Plan and adequacy of the APE
March–May 2022	Consult with SHPO regarding adequacy of APE
January–May 2023	Conduct archival research and background review
January–April 2023	Develop and obtain consensus on Inventory and NRHP Evaluation strategy and permitting approach
June–September 2023	Conduct field studies
October 2023–January 2024	Analyze data and prepare draft TSR
January 2024	Distribute draft TSR to stakeholders
February–April 2024	Stakeholder review and provide comments on draft TSR (90 days)
April–June 2024	Resolve comments and prepare final TSR
April–August 2024	Develop Draft HPMP
August 2024	Distribute final TSR and Draft HPMP in Draft License Application

REFERENCES

Bettinger, Robert L. 1982. Archaeology East of the Range of Light: Aboriginal Human Ecology of the Inyo-Mono Region of Central Eastern California. Monographs in California and Great Basin Anthropology 1. Davis, California.

Busby, Colin I., John M. Findlay, and James C. Bard. 1979. A Cultural Resource Overview of the Bureau of Land Management Coleville, Bodie, Benton, and Owens Valley Planning Units, California. Cultural Resources Publications, Bureau of Land Management, Bakersfield, California.

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FERC (Federal Energy Regulatory Commission). 2002. Issuance of Guidelines for the Development of Historic Properties Management Plans (accessed online at Issuance of Guidelines for the Development of Historic Properties Management Plans (ferc.gov), August 7, 2021).

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Jackson, Thomas. 1997. Archaeological Data Recovery Program- Rush Meadow. Investigations at CA-MNO-2440/H, MNO-2459, MNO-2460, MNO-2461 and MNO-2463. Report on file at Southern California Edison, Rosemead, California.

NAHC (Native American Heritage Commission). 2020. Response to SLF Request, Rush Creek Hydroelectric, Mono County, California. November 2020.

NPS (National Park Service). 1983. *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. Federal Register, Volume 48, No. 190 (September 29, 1983) p. 44716. Accessed: May 15, 2021. Available online: https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf.

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SCE (Southern California Edison Company). 1990. Management Plan for Historic and Archaeological Resources Associated with the Rush Creek Hydroelectric Project, (FERC Project No. 1389), Mono and Inyo Counties, California. April 1990.

——. 2021. Rush Creek Project (FERC Project No. 1389) Pre-Application Document. December.

Williams, James C., and Robert A. Hicks. 1989. Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project No. 1388) and Rush Creek (FERC Project No. 1389) Hydroelectric Systems, Mono County, California. Submitted to Environmental Affairs Division, Southern California Edison Company, Rosemead, California. July 1989.

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MAPS

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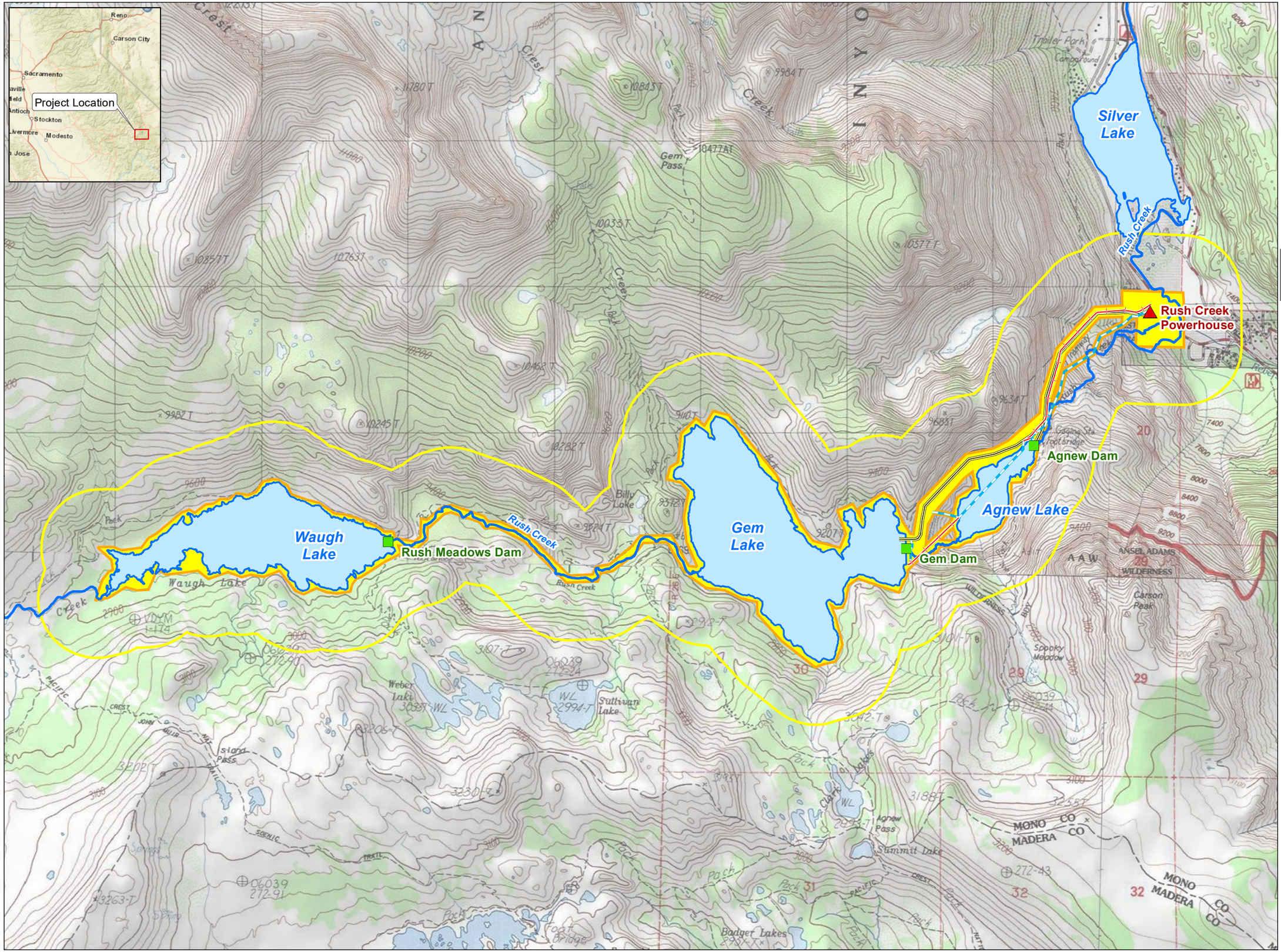

SCE Facilities

- Powerhouse
- Dam
- Flowline / Penstock
- Power or Communication Line
- Tramway
- FERC Project Boundary

Other Features

- Rush Creek
- Lake

Cultural Data

- Area of Potential Effects (APE)
- Study Area

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Rush Creek Project (FERC 1389)

Map CUL 2-1

Archaeological APE and Study Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 3/21/2022

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TRI 1 – TRIBAL RESOURCES TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

TRI 1 – Tribal Resources Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Tribal resources affected by the Project, including resources of traditional, cultural, or religious importance, and 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 take into account 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 the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.13 for a summary of available cultural resource information and Section 4.14 for a summary of available Tribal information [SCE 2021]).

- Native American Heritage Commission (NAHC) Sacred Lands File (SLF) for the Project area, received on November 6, 2020 (NAHC 2020).

- Ten cultural affiliations/heritage associations were identified based on information provided by the NAHC, review of the NAHC Digital Atlas, plus a sample of relevant ethnographic and linguistic papers (Golla 2011; Goode 2020; Levy 1978; U.C. Berkeley 2019), and information from SCE's Lee Vining PAD (FERC Project No. 1388).

- Additional ethnographic literature includes Emma Lou Davis (1965), Catherine Fowler and Sven Liljeblad (1986), Liljeblad and Fowler (1986), Frederick Hulse (n.d.), C. Hart Merriam (n.d.), Willard Park (1933–1940; see also Fowler, 1989), unpublished notes from Davis, Warren d'Azevedo, Sven Liljeblad, Omer Stewart, Margaret Wheat, and others.

[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).

- Data on trails and other nearby resources conducted by Davis-King and Snyder (2010).

- Synthesis of information on Mono County American Indians in Davis-King (2007, 2010).

- Initial research found no investigations to date of: (1) an American Indian ethnography in the vicinity of the Project; (2) previously documented American Indian TCPs; or (3) previously documented other American Indian resources, some of which may be eligible for listing in the NRHP.

- Research has indicated there are no American Indian Federal trust lands/allotments in the vicinity of the Project. There are some Indian allotments in the region, but they are not proximate to the Project.

- Based on the information available, there is potential for Tribal resources to be located in the vicinity of the Project, as the local American Indian communities continue to access medicine plants, food plants, materials for tools, and many other items as part of their ongoing traditional cultural lifeways. These communities also have a connection with certain biological species, such as bighorn sheep; critical habit for bighorn sheep is immediately adjacent to the FERC Project boundary.

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 Rush Creek Project. Previous ethnographies focused on nearby Tribal groups.

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).

- Evaluation of Tribal resources for the NRHP.

- NRHP evaluations of Tribal resources that could be potentially affected by the Proposed 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 FERC Project boundary (Map TRI 1-1).

    - This study area will be used 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 entire area within the FERC Project boundary (Map TRI 1-2).

- 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 interested stakeholders, if any refinement/modification of the Proposed Project results in utilizing additional lands outside the FERC Project boundary or current APE.

STUDY APPROACH

The Tribal Resources Technical Study involves a multi-step process that includes: (1) meet with Tribal groups and resource agencies/stakeholders 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 the Tribes, the State Historic Preservation Officer (SHPO), and interested stakeholders 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 FERC Project boundary.

ARCHIVAL RESEARCH

- Conduct archival research at some of the following 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:

    - Autry Museum of the American West, Los Angeles
    - California State Archives, Sacramento
    - California State Library, California History Room, Sacramento
    - Emma Lou Davis Archive, Bishop
    - Hulse and Essene (Bancroft Library, Berkeley and elsewhere)
    - Huntington Library, SCE Records, and Photographs and Negatives, San Marino
    - Merriam (C. Hart) and Harrington (J. P.) notes
    - Mono Basin Historical Society, Lee Vining
    - Mono County (Official Records, Bridgeport)
    - National Archive and Records Administration, San Bruno

- Records of the United States Forest Service (Forest Service), Inyo National Forest (INF), Bishop
- Tuolumne County Carlo M. De Ferrari Archive, Sonora
- University of California, Berkeley, Bancroft Library
- University of California, Berkeley, Jepson Fieldnotes
- University of California, Davis, C. Hart Merriam Collection
- University of Nevada, Reno, Special Collections
- Yosemite National Park Research Library, El Portal

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, ten American Indian Tribes have been identified as having potential interests in the Project. These are:

- American Indian Council of Mariposa County (also known as Southern Sierra Miwuk Nation)
- Big Pine Paiute Tribe of Owens Valley
- Bishop Paiute Tribe
- Bridgeport Indian Colony
- Antelope Valley Paiute Tribe, Coleville
- Mono Lake Indian Community (Mono Lake Kukzadikaa Tribe)
- North Fork Mono Tribe of California
- North Fork Rancheria of Mono Indians
- Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California
- Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation, California
- Walker River Paiute Tribe
- Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch

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 and 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 and documented as described below.

- **Tribal Places** are locations associated with the ancestral past, places related to current gathering and/or hunting practices or be 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 Study Report (TSR).

- **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 TSR.

Because Tribal resources include both natural and cultural resources, coordination with other resource studies may be necessary in order 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 TSR, 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 TSR, 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 TSR, 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 TSR and TRI 1 – Tribal Resources TSR.

All 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, 1999).

TECHNICAL STUDY REPORTING AND CONSULTATION

A draft TSR will be distributed to interested stakeholders for review and comment. Comments on the draft TSR will be addressed in a final TSR, which will be included in the Draft License Application. The draft and final TSR will include a summary of the information and findings of the technical studies.

The TSR 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.

HISTORIC PROPERTIES MANAGEMENT PLAN

SCE will revise and update the existing Management Plan for Historic and Archaeological Resources associated with the Rush Creek Hydroelectric Project (SCE 1990). The Management Plan will align with the standards of Section 106 and FERC guidelines for Historic Properties Management Plan (HPMP) development.

SCHEDULE

Date	Activity
February–May 2022	Meet with Tribal groups and resource agencies/stakeholders to discuss Draft Study Plan and adequacy of the APE
March–May 2022	Consult with SHPO regarding adequacy of the APE
January 2023	Submit Tribal Resources technical qualifications to INF
January–October 2023	Conduct archival research
January–October 2023	Engage Tribal groups to arrange meetings and establish protocols
January–October 2023	Conduct Tribal interviews to identify Tribal resources
October 2023–January 2024	Compile results of data gathered, evaluate Tribal resources, and prepare draft TSR
January 2024	Distribute draft TSR to stakeholders
February–April 2024	Stakeholder review and provide comment on draft TSR (90 days)
April–June 2024	Resolve comments and prepare final TSR
April–August 2024	Develop Draft HPMP
August 2024	Distribute final TSR and Draft HPMP in Draft License Application

REFERENCES

ACHP (Advisory Council on Historic Preservation). 2012. Consultation with Indian Tribes in the Section 106 Review Process: A Handbook. (Note as of 28 April 2021 this was unavailable online with the provision that "The handbook is being updated and will be available soon."

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MAPS

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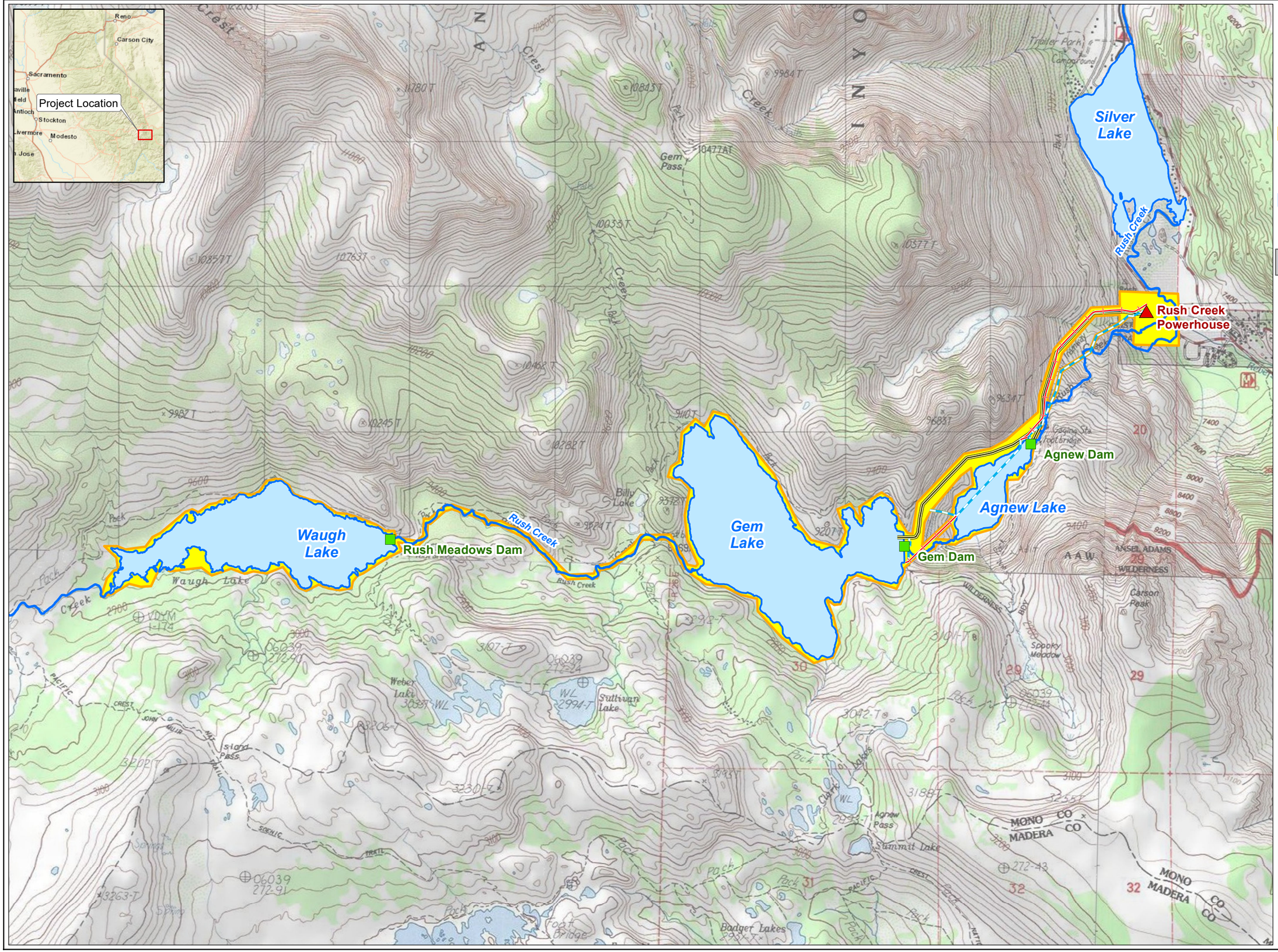

SCE Facilities

- Powerhouse
- Dam
- Flowline / Penstock
- Power or Communication Line
- Tramway
- FERC Project Boundary

Other Features

- Rush Creek
- Lake

Cultural Data

- Area of Potential Effects (APE)

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Rush Creek Project (FERC 1389)

Map TRI 1-1

Tribal Resources APE

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 5/17/2022

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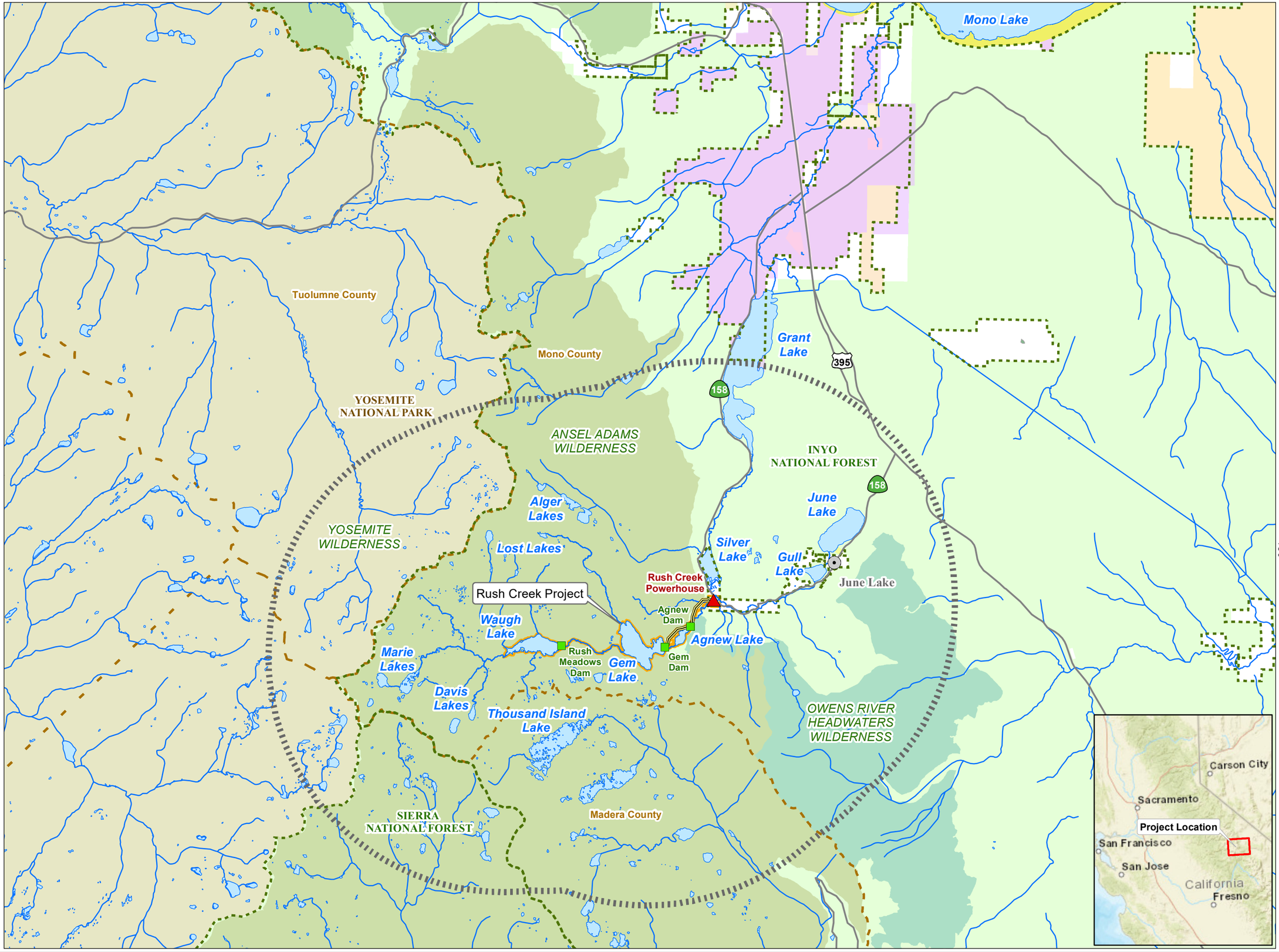

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- FERC Boundary

Other Features

- City/Town
- Highway
- River/Stream
- Lake
- County Boundary

Land Jurisdiction and National Wilderness Areas/Parks*

- Local Government
- LADWP
- State Government
- Bureau of Land Management
- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

Cultural Data

- Tribal Resources Study Area

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Map TRI 1-2

Tribal Resources Study Area

0 0.5 1 2 Miles

Date: 5/17/2022

Projection: UTM Zone 11
Datum: NAD 83

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LAND 1 – AESTHETICS
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

LAND 1 – Aesthetics Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Visual quality.

PROJECT NEXUS

- The presence of Project facilities and/or Project operations could potentially affect visual quality.

RELEVANT INFORMATION

The following information is available regarding aesthetics in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.12 for a summary of aesthetic information [SCE 2021]).

- Forest Service Handbook, Landscape Aesthetics – A Handbook for Scenery Management (Forest Service 1995), which describes the Forest Service Scenery Management System (SMS), a system to inventory and analyze aesthetic values of National Forest System (NFS) land.

- Management prescriptions and direction included in the Land Management Plan (LMP) for the Inyo National Forest (INF) (Forest Service 2019) that pertain to Project facilities located in the INF.

- The Wilderness Management Plan for the Ansel Adams, John Muir, and Dinkey Lakes Wildernesses (Forest Service 2001), which includes management directives applicable to visual resources in the Ansel Adams Wilderness.

- Visual resource management goals and policies identified in the Mono County General Plan (Mono County 2015) that pertain to Project facilities located on private (SCE) land.

POTENTIAL INFORMATION GAPS

- Characterization of the existing scenic integrity (ESI) of the Project facilities on NFS land compared to surrounding landscape conditions and scenic integrity objectives (SIO) established by the INF.

- Characterization of the existing visual condition of the Project facilities on private land compared to visual resource management goals and policies established by Mono County.

- Visual character of Horsetail Falls under different flow conditions.

STUDY OBJECTIVES

- Establish Key Observation Points (KOP) from which the Project facilities are visible by the public.

- Document the ESI of the existing Project facilities on NFS land and their associated viewsheds relative to the Forest Service SIOs.

- Document the visual condition of the existing Project facilities on private land relative to Mono County goals and policies that pertain to visual resources.

- Document the visual character of Horsetail Falls under different flow conditions.

- Prepare visual renderings of the Proposed Project alternatives.

EXTENT OF STUDY AREA

- The study area for the visual resource assessment includes the Project facilities identified in Table LAND 1-1 and their associated viewsheds.

    - For the purposes of this study, a viewshed is defined as an area of the landscape that is visible from a particular location or series of points (e.g., an overlook or a trail, respectively). The viewsheds include the primary travel routes and recreation areas from which the existing Project facilities are visible to the public.

- 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 majority of Project facilities are located on federal land within the INF and Ansel Adams Wilderness Area and managed by the Forest Service. The INF LMP (Forest Service 2019) established SIOs for INF lands using the Forest Service SMS (Forest Service 1995). The SIOs identify the desired level of scenic quality and diversity of a landscape based on physical and sociological characteristics of an area. Therefore, Project facilities located on NFS land will be assessed with respect to the management objectives established by the INF. Forest Service SIOs do not apply to private land.

Some Project facilities are located on private land within Mono County. Project facilities on private lands will be assessed relative to the goals and policies outlined in the Mono County General Plan that pertain to visual resources, to the extent these goals and policies apply to the Project.

Section 4.13, Aesthetic Resources of the PAD (SCE 2021) includes information about visual resources in the vicinity of the Project. The visual resource study steps described below will build on the information presented in the PAD.

ESTABLISH KOPS AND DESCRIBE THE LANDSCAPE CHARACTER OF THE PROJECT FACILITY VIEWSHEDS

- Select representative KOPs and define the Project facility viewsheds from each KOP.

  - The KOPs will be selected at locations along primary travel corridors (i.e., State Route 158 [SR-158]) and Rush Creek Trail) from which the Project facilities are readily visible by the public. KOP selection will be completed in consultation with the INF and Mono County, as applicable.

  - The location of each KOP will be recorded using a sub-meter Global Positioning System (GPS) unit for mapping purposes. If allowed by the Forest Service and/or Mono County, select KOP locations will also be physically marked with a pin so that they can be easily and accurately relocated, if necessary.

  - The location of each KOP will be depicted on a map(s) with respect to the Project facilities and INF SIOs (where applicable).

- Develop a standardized inventory form in consultation with INF. The standardized inventory form will be developed to prompt a consistent descriptive account of the Project facility viewsheds from each KOP in terms of landscape attributes (forms, lines, colors and textures that comprise the view); ecological unit descriptions; and scenic attractiveness.

- Narratively document the Project facility viewsheds from each KOP utilizing the standardized inventory form. Documentation shall take place during the summer.

- Photo document the Project facility viewsheds from each KOP. Documentation shall take place during the summer and should be concurrent with the narrative documentation.

- Synthesize, in writing, a description of the landscape character of the Project facility viewshed from each KOP utilizing data collected on the standardized inventory form.

DOCUMENT THE ESI OF THE EXISTING PROJECT FACILITIES RELATIVE TO FOREST SERVICE SIOS

- Based on the landscape character description, establish an ESI rating for each Project facility viewshed using the same rating system as used in the SMS for scenic integrity: very high, high, moderate, low, and very low.

- Based on the ESI ratings, assess the compatibility of Project facilities with surrounding landscape conditions and determine whether the Project facilities conform to established Forest Service SIOs.

DETERMINE CONSISTENCY OF THE EXISTING PROJECT FACILITIES WITH RELEVANT MONO COUNTY GOALS AND POLICIES

- Based on the landscape character description, determine whether the Project facilities viewsheds are consistent with established Mono County General Plan (Mono County 2015) visual resource goals and policies.

CHARACTERIZE HORSETAIL FALLS UNDER VARIOUS FLOW CONDITIONS

- Identify two-three locations (i.e., KOPs) from which Horsetail Falls is readily visible by the public (e.g., from SR-158 and from the Rush Creek Trail).
    - To facilitate comparison over time, the location of each KOP will be recorded using a sub-meter GPS unit and the view angle will be recorded with a compass. In addition, each KOP will be physically marked with a pin (as allowed) so it can be accurately relocated.
- Proposed target flows for characterization include: (1) a spill event[1]; (2) 70-85[2] cubic feet per second (cfs); (3) 13-20[3] cfs; (4) 5-8 cfs; and (5) 1 cfs (current minimum instream flow release requirement).
- Photo document visual conditions of Horsetail Falls from the established KOPs at the five target flows, using the same camera/lens settings and view angle during each flow.
- Utilize the photographs to describe and characterize the view of Horsetail Falls under different flow conditions.

PREPARE VISUAL RENDERINGS OF PROPOSED PROJECT ALTERNATIVES

- From the representative KOPs, prepare two visual renderings (one looking upstream and one looking downstream) of each Proposed Project alternative, including:
    - Rush Meadows Dam – full and partial removal
    - Gem Dam – retrofit
    - Agnew Dam – full and partial removal
- Utilize the visual renderings to assess the compatibility of the Proposed Project alternatives with surrounding landscape conditions and determine conformance to established Forest Service SIOs.

REPORTING

- Study methods and results will be documented in a LAND 1 – Aesthetics Technical Study Report (TSR). The TSR will include summary tables and maps, as appropriate.

[1] Assuming a spill events occurs during study implementation.
[2] This evaluation will be conducted in coordination with the AQ 1 – Instream Flow Technical Study Plan.
[3] This evaluation will be conducted in coordination with the AQ 1 – Instream Flow Technical Study Plan.

SCHEDULE

Date	Activity
January–March 2023	Summarize land management direction and objectives, establish KOPs, and develop inventory forms
June–August 2023	Inventory, photo document, and assess Project facilities
May–August 2023	Photo document and characterize Horsetail Falls at five different flows, assuming spill flows are available
September 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table LAND 1-1. Project Facilities

Rush Meadows Dam Area
Dams
Rush Meadows Dam
Reservoirs
Waugh Lake
Valve House
Rush Meadows Dam Valve House
Stream Gages
Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)
Reservoir Gages
Waugh Lake (USGS No. 10287260; SCE No. 359)
Trails
Rush Meadows Dam Access Trail
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities
Rush Meadows Dam Equipment Shed
Rush Meadows Dam Gage House
Rush Meadows Dam Solar Facility
Gem Dam Area
Dams
Gem Dam
Reservoirs
Gem Lake
Flowline
Gem Dam to Agnew Junction Flowline
Valve House
Gem Valve House and Cabin
Gem Dam Arch 8 Valve House
Gem Flowline Valve House
Stream Gages
Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)
Reservoir Gages
Gem Lake (USGS No. 10287280; SCE No. 352)

Gem Dam Area (continued)
Communication Lines
Communication Line from Rush Creek Powerhouse to Gem Lake Dam
Communication Line from Gem Valve House to Arch 8 Valve House
Communication Line from Gem Tram Hoist House to Gem Valve House
Trams and Hoist Houses
Gem Tram
Gem Tram Hoist House
Gem Tram Lower/Upper Landing
Trails
Lower Gem Dam Access Trail
Gem Dam Arch 8 Access Trail
Upper Gem Dam Access Trail
Gem Dam/Lake Ancillary and Support Facilities
Gem Lake Dock
Gem Lake Motor Barge
Gem Bunkhouse
Gem Outhouse
Gem Cookhouse
Gem Dam Compressor Shed
Gem Dam Storage Shed
Gem Dam Overhead Hoist House for Dam Length
Gem Dam Overhead Hoist House
Gem Fish Release Footbridge
Gem Tram Landing Footbridge
Gem Tram Bridge
Gem Weather Station
Gem Satellite Dish
Gem Solar Facility
Gem Valve House Tunnel

Agnew Dam Area
Dams
Agnew Dam
Reservoirs
Agnew Lake
Flowline
Agnew Dam to Agnew Junction Flowline
Valve House
Agnew Junction (Valve House and Stand Pipe)
Agnew Dam Valve House
Stream Gages
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)
Reservoir Gages
Agnew Lake (USGS No. 10287285; SCE No. 351)
Power Lines
4 kV Rush Creek Powerhouse to Agnew Dam Power Line
4 kV Agnew Lake Dam Power Line
4 kV Upper Agnew Boat Dock Power Line (non-operational)
Communication Lines
Communication Line from Agnew Hoist House to Agnew Boathouse
Trams and Hoist Houses
Agnew Tram
Agnew Tram Hoist House
Agnew Tram Landing
Trails
Agnew Stream Gage Access Trail
Agnew Dam/Lake Ancillary and Support Facilities
Lower Agnew Lake Boathouse / Dock
Upper Agnew Lake Boathouse / Dock
Agnew Lake Motor Barge
Agnew Cabin
Agnew Weather Station
Agnew Flume (downstream of Agnew Dam)

Rush Creek Powerhouse Area
Penstocks
Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)
Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)
Powerhouse
Rush Creek Powerhouse
Gages
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)
Transmission Lines
2.4 kV Switchyard to Powerhouse Transmission Line
Powerhouse Ancillary and Support Facilities
Rush Creek Powerhouse Complex Access Road
Cottages (2)
Garages (4)
Warehouse and Dock
Machine Shop
Pump House
Woodshed (2)
Helicopter Landing Site
Tank (propane)
Bridge over Powerhouse Tailrace
Bridge over Rush Creek

LAND 2 – NOISE
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

LAND 2 – Noise Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Protection of noise sensitive receptors (i.e., residences, businesses, recreation areas, and wildlife areas).

PROJECT NEXUS

- Routine operation of the Rush Creek Project Powerhouse may create excessive noise impacting sensitive receptors.

- Use of helicopters, construction equipment, and trucks to support construction and restoration activities associated with retrofitting/removal of Project dams, and potential enhancements in the lower Rush Creek channel may create excessive noise impacting sensitive receptors.

RELEVANT INFORMATION

The following information is available and was reviewed to determine Project noise study needs:

- Noise level limitations and definitions identified in the Mono County Code, Chapter 10.16, Noise Regulation (Mono County 2015a).

- Goals, objectives, and policies designed to control and abate environmental noise and to limit community exposure as outlined in the Mono County General Plan, Noise Element (Mono County 2015b).

- California Department of Transportation guidance on identifying potential for adverse effects due to noise or vibration (Caltrans 2020a, 2020b).

- Guidance for screening air traffic actions for potential noise impacts outlined in the Federal Aviation Administration's Desk Reference (FAA 2020).

POTENTIAL INFORMATION GAPS

- Ambient noise (no generation at powerhouse) and noise emanating from the Rush Creek Powerhouse under different generation loads.

- Information on ambient noise and anticipated noise levels associated with use of helicopters, construction equipment, and trucks during construction and restoration activities associated with retrofitting/removal of Project dams, and potential enhancements in the lower Rush Creek channel.

STUDY OBJECTIVES

Characterize ambient and Project-generated noise at sensitive receptor areas (i.e., residences, businesses, recreation areas, and wildlife areas) and compare to applicable state and local noise regulations/ordinances associated with the following activities:

- Routine operations of the Rush Creek Powerhouse
- Retrofitting/removal of dams and potential enhancement of the lower Rush Creek channel
    - Helicopter use
    - Construction equipment use
    - Truck use

EXTENT OF STUDY AREA

- Refer to Map LAND 2-1 for the noise assessment study area. The study area for the noise assessment includes sensitive receptors:
    - In the vicinity of the Rush Creek Powerhouse (powerhouse noise).
    - Along the helicopter flight path from June Mountain Ski Area Parking Lot to top of ridge near Agnew Dam (helicopter noise).
    - Adjacent to the June Mountain Ski Area Parking Lot and the potential enhancement area in lower Rush Creek channel (construction equipment noise).
    - Along State Route 158 (SR-158) from June Mountain Ski Area Parking Lot to U.S. Highway 395 (US-395) (truck noise).
- 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 Southern California Edison (SCE) has not received specific approval from the landowner to enter the property to perform the study.

STUDY APPROACH

GENERAL APPROACH

Identify Noise Sensitive Receptors/Points of Interest

Residences, businesses, recreation areas, and wildlife areas represent locations most at risk to noise impacts and are considered noise sensitive receptors or Points of Interest (POI). The identification of applicable POI for the noise analysis will consider the local terrain, existing land uses, recreational activities, and wildlife occurrences. For each of the study components, selection of POI will identified in consultation with resource agencies and interested stakeholders.

Field Characterize of Ambient/Project-Induced Noise

Accurately field characterizing of ambient/Project-induced noise requires measurements at or near identified POI using appropriate equipment for the level of accuracy desired. To accomplish this goal, field measurements will utilize an integrating sound level meter similar to a Larson Davis 824/831 and associated pre-amplifier and microphone. The entire system will be certified by an independent authority attesting to the accuracy of the equipment meeting the following performance standards describing tolerance limits and operational temperature range:

- IEC 61672-1:2013, Class 1 (IEC 2013)
- ANSI S1.4, ANSI S1.43 Type 1 (ANSI 1983, ANSI 1997)

A separate acoustic calibrator will be used before and after field measurements to ensure proper equipment function.

The goal is to capture typical conditions at each POI. Summer through fall comprises the primary vacationing period within the study area with numbers of visitors peaking roughly July and August. Because noise generating activity associated with recreation (primarily vehicle traffic) fluctuates based on numbers of visitors, a single ambient noise measurement would be inadequate to fully describe the existing noise environment and potential for impacts. Therefore, ambient noise measurements would be performed at each site during the following three periods:

1. June: Early in the recreation season with fewer visitors and lower anticipated ambient noise levels.
2. August: Peak recreation season with the most visitors expected and the greatest ambient noise levels.
3. October: End of recreation season with fewer visitors and lower anticipated ambient noise levels.

For each study component, the noise study team will engage the resource agencies and interested stakeholders for background information to guide the planning of these measurements, particularly in determining the most appropriate deployment dates.

Analysis Metrics

Noise metrics quantify sounds so they can be compared with each other, and with their effects, in a standard way. This noise study will rely upon the following metrics to describe the noise environment in the study area.

- ***Maximum Sound Level (L_{max})*** represents the highest A-weighted sound level measured during a single event in which the sound changes with time. L_{max} is the maximum level that occurs over a fraction of a second so it does not fully describe the noise, because it does not account for how long the sound is heard.

- ***Equivalent Sound Level (L_{eq})*** is a "cumulative" metric that combines a series of noise events representing the decibel average of all sounds in the time period. The time period of an L_{eq} measurement is usually related to some activity and is given along with the value. Periods of 1 hour provide an appropriate assessment period for many environmental measurements with the time period often shown in parenthesis ($L_{eq(1)}$ for 1 hour).

- ***Community Noise Equivalent Level (CNEL)*** is a variation of the Day-Night Average Sound Level (DNL) that is prescribed by the State of California for airport noise rating and building code standards (California Code of Regulations, title 21 Public Works, subchapter 6; California Administrative Code, Title 25, Building Standards, Chapter 2.5). CNEL is a cumulative metric that accounts for all noise events in a 24-hour period. Similar to $L_{eq(24)}$ except DNL contains an evening and nighttime noise penalty of 4.77 and 10 dB, respectively, to account for the added intrusiveness of environmental noise during those periods.

SPECIFY STUDY COMPONENTS

- The following describes the approach for each study component.

Powerhouse Operation

- Identify noise sensitive POI in the vicinity of the Rush Creek Powerhouse.
    - SCE currently proposes to establish the following POI:
        - Within 100 meter (m) of the Rush Creek Powerhouse, and
        - Two to three POI in the vicinity of the powerhouse (pending landowner permission) to be identified in consultation with resource agencies and interested stakeholders.

- Characterize ambient noise (no generation at the powerhouse) and noise emanating from the Rush Creek Powerhouse under different generation loads at noise sensitive POI.
    - Ambient noise levels will be characterized, in terms of L_{max} and $L_{eq(1)}$, at each POI.
    - Because CNEL requires at least 24-hours to measure directly at each POI, which may be impractical, the level will be approximated from $L_{eq(1)}$ with the appropriate period adjustments prescribed by the CNEL metric. If it is observed at any POI that the captured $L_{eq(1)}$ includes significant human contributions likely to vary throughout the day (i.e. people or vehicular traffic) then additional evening or nighttime $L_{eq(1)}$ measurements at that POI may be captured as well to refine the CNEL approximation of the ambient noise.
    - When capturing the powerhouse noise contribution, the loudest condition may occur at the greatest equipment load or potentially at a reduced load if such a condition excites the equipment's resonant frequency. Due to this uncertainty, coordination with the powerhouse operators and local stakeholders will be conducted to determine the appropriate load conditions to capture. Analysis of historical load conditions at the Rush Creek Powerhouse can guide this consideration.
    - Consistent with the ambient condition, L_{max} and L_{eq} will be measured at each POI for various powerhouse operating loads. If the powerhouse equipment noise dominates the ambient noise and is stable over time, a full 1-hour measurement of L_{eq} will not be required and can be shortened to 1 to 2 minutes for each condition. CNEL will then be calculated for the various powerhouse load conditions based upon L_{eq}.
- Compare noise levels to applicable state and county regulations/ordinances.
    - Both the ambient and power generation noise levels will be compared to state and Mono County noise level standards, which describe maximum allowable exterior noise exposure by land use in terms of CNEL.

Helicopter Use

- Identify noise sensitive POI in the vicinity of the helicopter flight path.
    - SCE currently proposes to establish the following POI:
        - Within 100 m of the June Mountain Ski Area Parking Lot, and
        - Two to three POI along the flight path (pending landowner permission) to be identified in consultation with resource agencies and interested stakeholders.

- Characterize ambient and Project-induced noise levels at each sensitive POI.
    - Ambient noise levels will be captured in terms of L_{max} and $L_{eq(1)}$. The captured $L_{eq(1)}$ values will be used to calculate ambient CNEL at applicable POI along the helicopter flight path.
    - Helicopter noise from Project activities will be characterized using noise modeling software. The Department of Defense NOISEMAP suite of computer programs for aircraft noise modeling and analysis includes the Rotorcraft Noise Model (RNM) (Wyle 1998; Wasmer Consulting 2006a, 2006b). The RNM will be used to predict far-field noise for single or multiple flight operations while calculating the effects of sound propagation over varying ground terrain.
        - Noise levels are computed in the time domain and with a variety of integrated metrics, including L_{max}, L_{eq}, and CNEL, at receiver positions on or above the ground at specific POI and over a uniform grid. Software noise modeling is accomplished by determining and building each aircraft's flight tracks (paths over the ground) and flight profiles (which include data such as altitude, airspeed, power settings, and other flight conditions). RNM includes a database of noise spheres for various helicopters. If the specific airframe that will be used for this Project is not available a surrogate will be selected. RNM will be used to calculate L_{max}, L_{eq}, and CNEL at POI along the flight path for helicopter operations.
- Compare noise levels to applicable state and county regulations/ordinances.
    - Results will be compared with state and Mono County noise level standard for maximum allowable exterior noise exposure by land use in terms of CNEL. Single event L_{max} levels will be discussed in terms of the context and intensity of the existing environment.

Construction Equipment

- Identify noise sensitive POI adjacent to the June Mountain Ski Area Parking Lot and the potential enhancement area in the lower Rush Creek channel.
    - SCE currently proposes to establish the following POI:
    - Within 100 m of the June Mountain Ski Area Parking Lot,
    - On SCE land near SR-158 and the potential enhancement area, and
    - Two to three POI adjacent to the June Mountain Ski Area Parking Lot and the potential enhancement area to be identified in consultation with resource agencies and interested stakeholders.

- Characterize ambient and Project-induced noise levels at each sensitive POI.
  - Ambient noise levels to be captured in terms of L_{max} and $L_{eq(1)}$. The captured $L_{eq(1)}$ values will be used to calculate ambient CNEL at applicable POI.
  - Noise associated with construction equipment activity will be calculated using the Federal Highway Administration's (FHWA) software tool, the Roadway Construction Noise Model (RCNM) (FHWA 2006).
    - Input requires identification of the types of equipment (i.e., front end loader, dump truck, etc.) to be operated and the hours of operations. If such details are not available, then conservative assumptions will be made.
    - The software includes the ability to compute L_{max} and L_{eq}. With knowledge of the equipment operating hours, the construction equipment CNEL will be approximated, and the results compared to the Mono County noise level standard.
- Compare noise levels to applicable state and county regulations/ordinances.
  - Results will be compared with state and Mono County noise level standard for maximum allowable exterior noise exposure by land use in terms of CNEL. Single event L_{max} levels will be discussed in terms of the context and intensity of the existing environment.

Truck Use

- Identify noise sensitive POI along SR-158 from June Mountain Ski Area Parking Lot to US-395.
  - SCE currently proposes to establish the following POI:
    - Two POI located adjacent to Silver Lake (at Silver Lake Campground and Silver Lake Resort).
    - These POI are in addition to the POI previously identified for assessment of construction equipment use.
- Characterize ambient noise levels at each sensitive POI.
  - Ambient noise levels to be captured in terms of L_{max} and $L_{eq(1)}$ at each of the POI along SR-158. The captured $L_{eq(1)}$ values will be used to calculate ambient CNEL at applicable POI.
  - Recent environmental studies will be reviewed to determine if existing noise levels have already been measured or calculated along SR-158.

- If not available, the FHWA provides the following guidelines for establishing baseline conditions through measurement:
  - Noise measurements are usually taken at Level of Service C (LOS C) or better. LOS C is the point where traffic is as congested as it can be but moving the fastest speed allowable by law (LOS A = virtually no traffic, LOS D = gridlock).
  - Noise readings should be taken on a Tuesday, Wednesday, or Thursday.
  - Three noise readings should be taken per site in 20-minute increments and then averaged.

- Characterize Project-induced noise levels at each sensitive POI.
  - The FHWA provides the Traffic Noise Model (TNM) for road vehicular noise analysis. TNM Version 2.5 includes a Low Volume Tool as a simple noise calculator for a single roadway (FHWA 2004).
    - This study will utilize the TNM Low Volume Tool to calculate the $L_{eq(1)}$ at POI along SR-158 due to the proposed truck hauling noise. $L_{eq(1)}$ values will be used to calculate CNEL at applicable POI with the addition of truck hauling noise.

- Compare noise levels to applicable state and county regulations/ordinances.
  - Results will be compared with state and Mono County noise level standard for maximum allowable exterior noise exposure by land use in terms of CNEL. Single event L_{max} levels will be discussed in terms of the context and intensity of the existing environment.

SCHEDULE

Date	Activity
March–May 2023	Identify sensitive receptors/ POI with resource agencies and stakeholders
June–October 2023	Conduct noise surveys
October 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March 2024–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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MAPS

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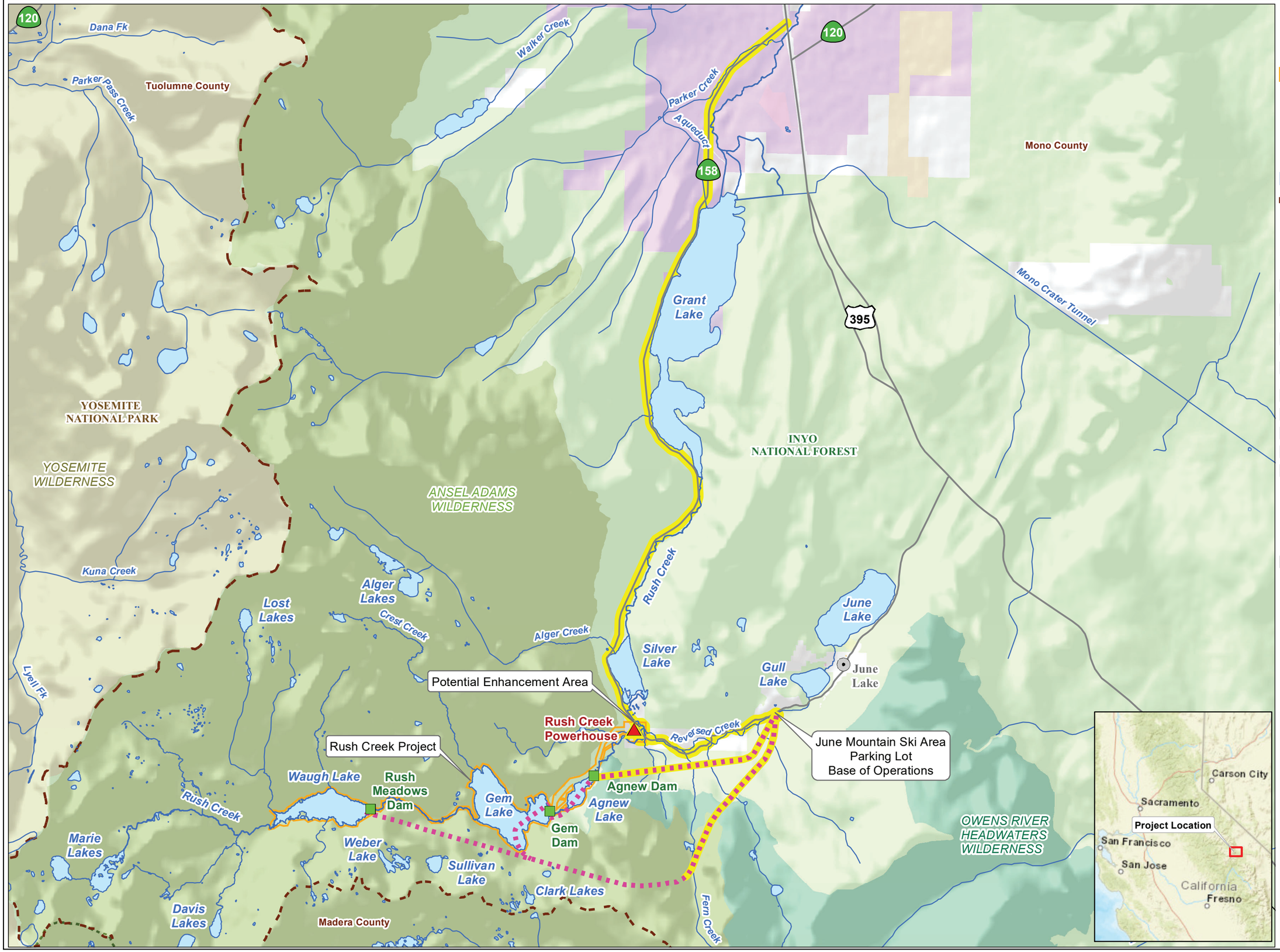

SCE Facilities

- Dam
- Powerhouse
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary
- Approximate Helicopter Flight Path

Land Jurisdiction and National Wilderness Areas/Parks*

- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Local Government
- LADWP
- State Government
- Bureau of Land Management
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

LAND-2 Study

- Noise Assessment Study Area

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Rush Creek Project (FERC 1389)

LAND 2-1

Overview of Study Area

0 0.5 1 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 10/11/2021

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REC 1 – RECREATION
TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

REC 1 – Recreation Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Recreation use and opportunities in the vicinity of the Project.
- Public safety.
- Flow fluctuations in Rush Creek downstream of the Rush Creek Tailrace.

PROJECT NEXUS

- Maintaining recreation opportunities and public safety associated with operations and maintenance of the Project.

RELEVANT INFORMATION

The following information is available regarding recreation in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.11 for a summary of recreation information [SCE 2021]).

- Management prescriptions and direction relevant to recreation included in the Land Management Plan for the Inyo National Forest (INF) (Forest Service 2019).
- Management directives applicable to recreation in the Ansel Adams Wilderness in the Wilderness Management Plan for the Ansel Adams, John Muir, and Dinkey Lakes Wildernesses (Forest Service 2001a).
- Programmatic direction and management strategies for the Ansel Adams Wilderness in the Final Environmental Impact Statement (FEIS) (and FEIS appendices): Management Direction for the Ansel Adams, John Muir and Dinkey Lakes Wildernesses (Forest Service 2001b).
- Goals, policies, and objectives identified in the Mono County General Plan (Mono County 2015) that pertain to outdoor recreation opportunities in the County.
- Section 2.0, Project Location, Facilities, and Operation, and Section 4.3, Water Use and Hydrology of the Rush Creek PAD, present a summary of Project operations and water use; available stream gage data; and daily historical, existing, and unimpaired hydrology for Project-affected stream segments[1] and Project reservoirs.
- SCE's Public Safety Plan for the Rush Creek Project (SCE 2016).

[1] Stream segments as used in this document are typically long sections of stream with a relatively homogeneous flow regime. Segments may be subdivided into smaller reaches for study purposes and/or based on fluvial geomorphology (e.g., stream gradient, channel confinement).

- 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.

POTENTIAL INFORMATION GAPS

- Non-commercial recreation use data for the Rush Creek Trail, including day and overnight use, and destination.

- Commercial recreation use data for the Rush Creek Trail and the pack station camps in the vicinity of the Project, including the Billy Lake Stock Camp, and Frontier Pack Station Camp.

- Data on flow fluctuations in Rush Creek downstream of the Rush Creek Tailrace.

- Recreation trends and potential future recreation demand.

- Project facility conditions, and operation and maintenance activities relative to public safety.

STUDY OBJECTIVES

- Characterize the recreation setting and opportunities in the Rush Creek Watershed and in the immediate vicinity of the Project.

- Characterize non-commercial recreation use along the Rush Creek Trail and in the vicinity of the Project, including day and overnight use.

- Characterize commercial use along the Rush Creek Trail and in the vicinity of the Project, including day and overnight trips.

- Characterize angling opportunities and use at the Project reservoirs and adjacent Project-affected stream segments.

- Characterize sub-daily changes in water surface elevation in Rush Creek downstream of the Rush Creek Powerhouse Tailrace associated with Project operations.

- Estimate potential 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 includes the Rush Creek Watershed from its headwaters near Mt. Lyell to Rush Creek confluence with Grant Lake (see PAD Map 4.2-1). The study area will be used when developing general information about the recreation resources in the vicinity of the Project for contextual purposes. The following areas will be the primary focus of the study:

- The trail network in the vicinity of the Project, including: the Rush Creek Trail from a developed trailhead located near Silver Lake to its intersection with the Pacific Crest Trail; and the trails that connect to the Rush Creek Trail (e.g., Spooky Meadows Trail, Clark Lakes Trail, Alger Lakes Trail, and Weber Lake Trail).

- Project-affected stream segments from Waugh Lake to the confluence of Rush Creek and Grant Lake. Table REC 1-1 identifies the Project-affected stream segments.

- The three Project reservoirs (Waugh, Gem, and Agnew lakes) and Silver Lake (non-Project natural lake) including the area immediately surrounding these reservoirs/lakes.

- Commercial pack stations camps located along the Rush Creek Trail, including the Billy Lake Stock Camp, and Frontier Pack Station Camp.

These areas are shown on Map REC 1-1 with respect to the primary Project facilities, FERC Project boundary, and land jurisdiction.

- 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

Section 4.11, Recreation Resources of the PAD (SCE 2021) characterizes the recreation setting and opportunities in the vicinity of the Project (including with narrative descriptions accompanied by maps and tables), based on data and information readily available from existing information sources. The study elements described below will build on the information presented in the PAD.

CHARACTERIZE NON-COMMERCIAL RECREATION USE ALONG THE RUSH CREEK TRAIL AND IN THE VICINITY OF THE PROJECT

- Interview INF Wilderness Rangers familiar with the Rush Creek Watershed regarding trail use in the vicinity of the Project and popular backcountry destinations.

- Utilize overnight use data (five most recent years) collected by the INF under their wilderness permit system to develop the following information regarding use along the Rush Creek Trail and in the vicinity of the Project reservoirs. Wilderness permits are only required from May 1 through November 1. Therefore, use estimates will cover this period.
    - Identify common overnight destinations that are accessed from the Rush Creek Trailhead.
    - Identify other trailheads used to access the Rush Creek Watershed.
    - Estimate the number of overnight visitors who use the Rush Creek Trail, starting from the Rush Creek Trailhead or other connected trailheads.
    - Identify destination, average group size, and length of stay, focusing on use in the vicinity of the Project- affected stream segments and Project reservoirs.
    - Estimate weekday, weekend and holiday use, if possible given the information available on the wilderness permits.
    - Document the number of times the overnight quota at the Rush Creek Trailhead was met or exceeded.
    - Identify the area of origin of the visitors who utilize the Rush Creek Trail.
- Consult with INF staff to obtain estimates of day use along the Rush Creek Trail based on observations made by Forest Service staff.
- Conduct recreation use counts and visitor surveys at the Rush Creek Trail Trailhead. Recreation use counts and visitor surveys will focus on incoming and outgoing users of the Rush Creek Trail, as opposed to the Parker Bench Trail, which is also accessible from the same trailhead. Information collected will be used to help document recreation use levels along the Rush Creek Trail, and to develop information about visitor and angling use. Information will be gathered using in-person counts and visitor surveys, as well as via a self-registration box, as described in the following.
    - In-person visitor counts and surveys will be conducted as follows:
        - A survey technician will be stationed at the Rush Creek Trailhead[2] to count visitors and administer surveys a total of 34 days throughout the 2023 recreation season (i.e., between May 1 and November 1, 2023), when the trail is accessible.

[2] The survey technician may be stationed just south of the main trailhead to avoid counting or surveying users heading northeast along the Parker Bench Trail.

- Counts and surveys will be conducted on one weekday and one weekend day every other week (randomly selected), and on all holidays, resulting in:
  - 13 weekdays;
  - 13 weekend days; and
  - 3 holidays - Memorial Day (May 27–29, 2023), Independence Day (July 3–4, 2023), Labor Day (September 2–4, 2023).
- The survey technician will be present during one of two randomly selected time blocks defined as follows: Block 1 – 8:00am-12:00pm and Block 2 – 4:00pm-sunset.
- During each survey period, the survey technician will:
  - Record the total number of people accessing the trail distinguishing between overnight and day-users. The survey technician will also record the total number of anglers.
  - Intercept visitors and ask them to participate in a brief survey, which will be administered using a survey form developed in consultation with the INF and California Department of Fish and Wildlife (CDFW). The survey form will focus on collecting demographic, destination, and recreation activity information, including angling.

- The temporary self-registration box at the Rush Creek Trailhead will be established as follows:
  - The self-registration box will be maintained from May 1 through November 1, commensurate with the quota system.
  - The self-registration box will consist of a painted steel weatherproof box mounted on a painted steel post (or existing information board/kiosk).
  - Signage encouraging/directing day users and anglers of the Rush Creek Trail[3] (whether entering or exiting) to complete a short survey will be mounted adjacent to the box.
  - The box will contain survey forms (developed in consultation with the INF and CDFW as described above).

[3] The signage shall specify day users and anglers of the Rush Creek Trail to avoid capturing information from users headed northeast on the Parker Bench Trail.

CHARACTERIZE COMMERCIAL RECREATION USE ALONG THE RUSH CREEK TRAILHEAD AND IN THE VICINITY OF THE PROJECT

- Interview the Frontier Pack Station outfitter to identify the most popular pack routes and most popular backcountry destinations in the vicinity of the Project.

- Obtain and compile the most recent five years of overnight use data from the pack station outfitters and/or the INF to characterize commercial use along the Rush Creek Trail and at the overnight pack camps located in the vicinity of the Project.

CHARACTERIZE FLOW FLUCTUATION IN RUSH CREEK DOWNSTREAM OF THE RUSH CREEK POWERHOUSE TAILRACE

- To characterize flow fluctuations in Rush Creek below the Rush Creek Powerhouse Tailrace related to Project operations, a sub-daily analysis of water surface and discharge will be developed as part of implementation of the AQ 1 – Instream Flow Technical Study Plan (TSP) and the AQ 2 – Hydrology TSP.

- The sub-daily analysis will characterize flow fluctuation in Rush Creek under both existing and Proposed Project operations to characterize stream-based recreation opportunities and constraints.

ESTIMATE FUTURE RECREATION USE AND DEMAND

- Estimate future recreation needs in the vicinity of the Project.

    - Utilize census data and information available in current relevant federal, state, and local comprehensive plans to identify population projections and to document outdoor recreation use trends and needs.

    - Utilize use estimates and visitor survey responses, along with trends and population projections to estimate future recreation needs over the license period (assumed to be 50 years).

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

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 by consulting with SCE staff.

REPORTING

- Study methods and results will be documented in an REC 1 – Recreation Technical Study Report (TSR). The TSR will include summary tables and maps, as appropriate.

SCHEDULE

Date	Activity
January–March 2023	Gather and analyze existing available use data (including wilderness permit data from the INF)
January–April 2023	Develop the survey instrument in consultation with the Forest Service and CDFW Interview key information sources (i.e., INF, Frontier Pack Station Outfitter, local guides and outfitters, and June Lake homeowner's association representatives)
May 1–November 1, 2023	Conduct use counts and visitor surveys, and establish and maintain a temporary self-registration box at the Rush Creek Trail Trailhead
October 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

REFERENCES

Forest Service (United States Forest Service). 2001a. Wilderness Management Plan for the Ansel Adams, John Muir, and Dinkey Lakes Wildernesses. April.

——. 2001b. Management Direction for the Ansel Adams, John Muir and Dinkey Lakes Wilderness. Final Environmental Impact Statement. March.

——. 2019. Land Management Plan for the Inyo National Forest. September.

Mono County. 2015. Mono County General Plan Update. Conservation/Open Space Element.

SCE (Southern California Edison Company). 2016. Public Safety Plan for the Rush Creek Project, FERC Project No. 1389. November.

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TABLES

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Table REC 1-1. Stream Segments.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Elevation Range (feet) (% gradient)	Type	Description
Rush Creek				
Waugh Lake	1.51 (RM 22.24–23.75)	9,392[1]	—	Project Reservoir
Rush Creek Below Rush Meadow Dam	1.83 (RM 20.41–22.24)	9,036–9,371.6 (3.47%)	Project-affected Stream Segment	Moderate Gradient Mountain Stream
Gem Lake	0.93 (RM 19.48–20.41)	9,027.5[1]	—	Project Reservoir
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	8,539.2–9,008 (29.60%)	Project-affected Stream Segment	Steep Mountain Stream
Agnew Lake	0.58 (RM 18.60–19.18)	8,470[1]	—	Project Reservoir
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	8,214–8,460 (11.65%)	Project-affected Stream Segment	Steep Mountain Stream
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	7,306.8–8,214 (31.82%)	Project-affected Stream Segment	Steep Mountain Stream
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	7,216.2–7,306.8 (1.83%)	Project-affected Stream Segment	Low-Gradient Meadow Stream[3]
Silver Lake	0.83 (RM 15.89–16.72)	7,215[2]	—	Natural Lake
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	7,131–7,214.7 (0.59%)	Project-affected Stream Segment	Low-Gradient Stream
Grant Lake	3.88 (RM 9.32–13.20)	7,131[2]	—	Non-Project Reservoir; LADWP Controlled
Rush Creek Below Grant Lake	9.32 (RM 0.0–9.32)	6,327–7,080 (1.44%)	Non-Project Stream Segment; LADWP Controlled	Low-Gradient Stream
South Rush Creek				
South Rush Creek	0.46 (RM 0.0–0.46)	7,221–7,551.7 (13.62%)	Project-affected Stream Segment	Steep Mountain Stream[3]

Notes:
LADWP = Los Angeles Department of Water and Power
RM = River Mile

[1] Maximum seismic restriction elevation
[2] Approximate ordinary high water mark
[3] This stream segment has some very low gradient and some steeper gradient sections

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MAPS

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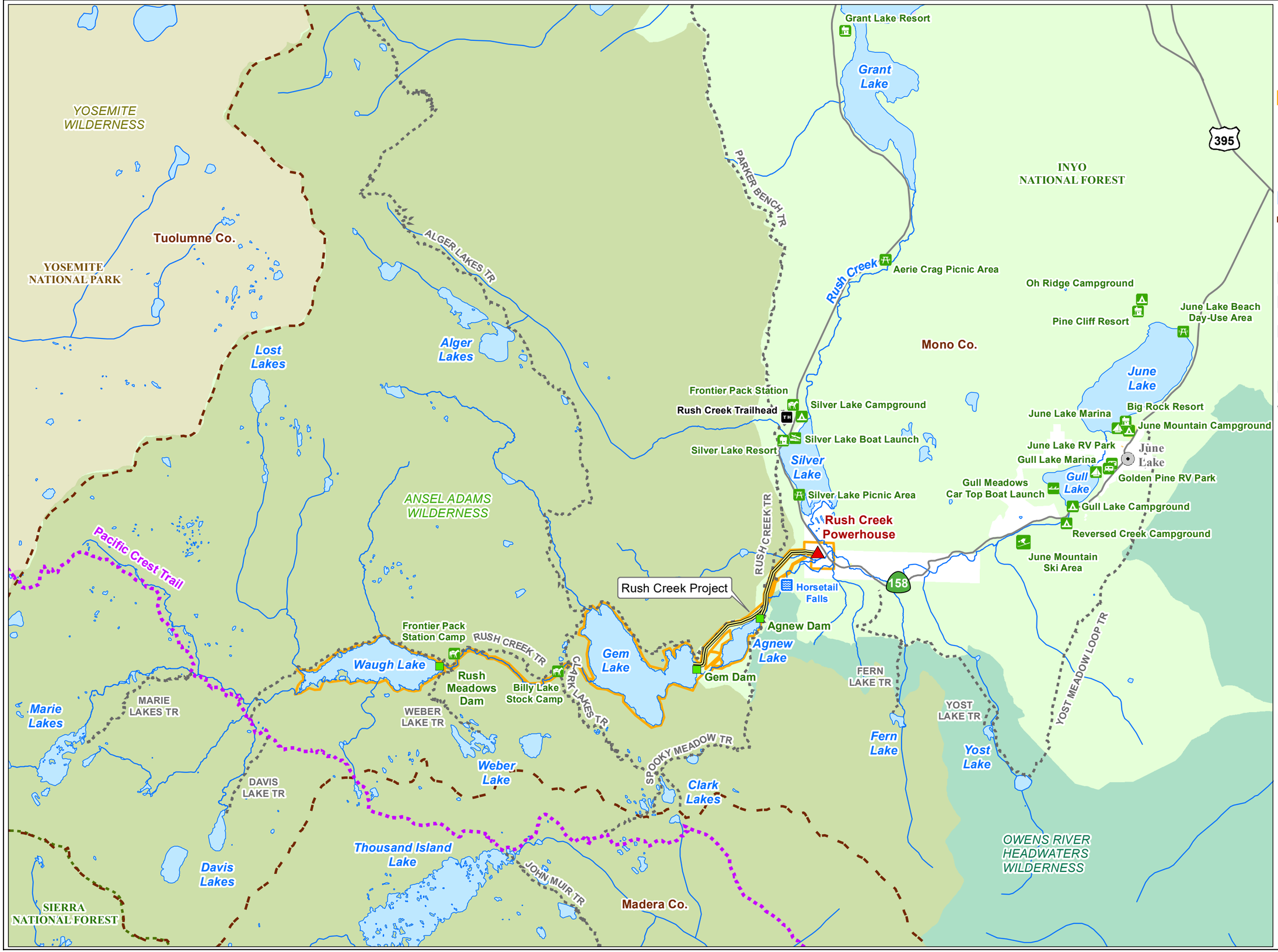

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary

Land Jurisdiction and National Wilderness Areas/Parks*

- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

Developed Recreation Facilities and Trails

- Boat Launch
- Marina
- Car Top Boat Launch
- Campground
- Day-Use Area and/or Picnic Area
- Pack Station
- RV Park
- Resort
- Ski Area
- Pacific Crest Trail
- Other Major Trail

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Rush Creek Project (FERC 1389)

Map REC 1-1

Recreation Setting in the Vicinity of the Rush Creek Project

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 10/26/2021

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TERR 1 – BOTANICAL RESOURCES TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

TERR 1 – Botanical Resources Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Potential loss or degradation of vegetation alliances.
- Potential effects on jurisdictional waters of the United States (U.S.) and the state.
- Potential alteration of habitat or loss of special-status plants.[1]
- Potential introduction or spread of non-native invasive plant (NNIP) populations.

PROJECT NEXUS

- Direct loss or degradation of vegetation alliances, including communities afforded special recognition by state and federal agencies (e.g., riparian communities and jurisdictional Waters of the U.S./State).
- Removal or disturbance of special-status plant, moss, and lichen populations.
- Introduction or spread of NNIPs.

RELEVANT INFORMATION

The following information is available regarding botanical resources in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.6 for a summary of wildlife resource information and to Section 4.9 for a summary of wetland, riparian and littoral habitat resource information [SCE 2021]):

VEGETATION ALLIANCES

- Classification and Assessment with land satellite (LANDSAT) imagery of Visible Ecological Groupings (CALVEG) United States Forest Service (Forest Service) Region 5.

SPECIAL-STATUS PLANTS

- Inyo National Forest (INF) Forest Service Plant Species of Conservation Concern (SCC) list and associated spatial data layer (NRM TESP-IS) (Forest Service 2019a).
- California Native Plant Society (CNPS) Inventory of Rare, Threatened and Endangered Plants (CNPS 2020).

[1] For the purposes of this study plan, the term special-status plant is defined to include plants (vascular and non-vascular plants [e.g., moss]) or lichen species that are granted protection by a federal or state agency.

- U.S. Fish and Wildlife Service (USFWS) Information for Planning, and Conservation System (IPaC) list of federal endangered and threatened species (USFWS 2020).

- California Natural Diversity Database (CNDDB) (CNDDB 2020).

- Federal Energy Regulatory Commission's (FERC's) Environmental Assessment, Rush Creek Project (FERC Project No. 1389) (FERC 1992).

- Rush Creek Emergency Project (FERC No. 1389) Pre-release Survey and Assessment Report (SCE 2017a).

- Rush Creek (Phase II) Project (FERC No. 1389) Pre-construction Biological Survey and SCE's Survey Report for Phase I and Phase II Projects (SCE 2017b, 2018).

NON-NATIVE INVASIVE PLANTS

- INF list of invasive plants of management concern for the Forest and associated spatial data layer (NRM TESP-IS) (Forest Service 2017).

- Final Environmental Impact Statement (FEIS) for the revision of the INF Land Management Plan (Forest Service 2019b).

- California Invasive Plant Inventory (Cal-IPC 2020).

RIPARIAN RESOURCES

- Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

- Environmental Assessment for Hydropower License, Rush Creek, FERC Project No. 1389-001, California (FERC 1992).

- Baseline Riparian Monitoring of Lee Vining and Rush Creeks, Year 1 (1999) Annual Report (Psomas 2000).

- Rush and Lee Vining Creeks Riparian Monitoring Baseline Summary (Psomas 2004).

- Biological Resources Evaluation Technical Report for the SCE South Lake Dam, Agnew Lake Dam, Saddlebag Lake Dam, and Tioga Lake Dam, and Auxiliary Dam Maintenance and Geo-membrane Lining Projects (Psomas 2010).

- Analysis of Riparian Vegetation Phase 2 (Year 1) and Comparison to Baseline (Read 2010).

- Vegetation Transect Survey Memorandum for California Department of Fish and Wildlife Temporary Variance of License Article 401 Curtailing Water Level

Requirements for Gem and Waugh Lakes for Seismic Concerns, SCE Rush Creek Hydroelectric Project (Psomas 2017).

- Rush Creek Emergency Project (FERC No. 1389) Pre-release Survey and Assessment Report (SCE 2017a).
- Rush Creek (Phase II) Project (FERC No. 1389) Pre-construction Biological Survey and Assessment Report Rush Meadows Dam Project Area (SCE 2017b).
- Analysis of Riparian Vegetation and Aquatic Habitat: 2018 Field Season and Comparison to Previous Years (Read and Salamunovich 2019).
- The USFWS National Wetlands Inventory (NWI) (USFWS 2021).

POTENTIAL INFORMATION GAPS

- Updated information on vegetation alliances, including riparian alliances.
- Updated information on special-status plant, moss, and lichen populations.
- Updated information on NNIPs.
- Information on historic and existing botanical resources within the inundation zones of the Project reservoirs.
- Characterization of the riparian community at riparian sampling sites along Project-affected stream segments,[2] including the relationship between the riparian community and stream flow.
- Detailed mapping of wetland and riparian communities within the potential enhancement area.[3]

STUDY OBJECTIVES

- Update vegetation alliances, including the riparian community, within 1 mile of the FERC Project boundary.
- Document special-status plant populations within the FERC Project boundary.[4]
- Document NNIP populations within the FERC Project boundary.

[2] Refer to Table TERR 1-1 for a list of riparian sampling sites.

[3] The potential enhancement area includes portions of the Rush Creek and South Rush Creek channels upstream and downstream of the State Route 158 crossing. The purpose of the potential enhancement is to address local flooding of residences during high-flow events. Refer to Map TERR 1-2 and PAD Map 3-5.

[4] Special-status plants along the Project-affected stream segments will only be documented at riparian sampling sites. Refer to Table TERR 1-1 for a list of riparian sampling sites.

- Characterize historic and current botanical resources in the historic inundation zones of Project reservoirs, including:
  - Document the historic location, distribution, and size of trees within the inundations zones; and
  - Document current plant species composition, distribution, and abundance in the historic inundation zones.
- Characterize riparian resources at riparian sampling sites along Project-affected stream segments, including the relationship between the riparian community and stream flow.
- Document the riparian community and wetlands in the potential enhancement area.

EXTENT OF STUDY AREA

- Refer to Map TERR 1-1 for the botanical resources study area. The study area for:
  - Vegetation alliances, including riparian communities, includes areas within 1 mile of the FERC Project boundary.
  - Special-status plant, moss, and lichen populations includes lands within the FERC Project boundary.[5]
  - NNIP populations includes lands within the FERC Project boundary.[6]
  - Historic and existing botanical resources includes the historic inundation zones of Project reservoirs.
  - Characterization of the riparian community at riparian sampling sites along Project-affected stream segments (Table TERR 1-1 and Map TERR 1-2).
  - Documentation of the riparian community and wetlands in the potential enhancement area.
- 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.

[5] Special-status plants along the Project-affected stream segments will only be documented at riparian sampling sites. Refer to Table TERR 1-1 for a list of riparian sampling sites.

[6] NNIPs along the Project-affected stream segments will only be documented at riparian sampling sites. This includes documentation of invasive aquatic plants and algae (i.e., Didymo [*Didymosphenia geminate*]). Refer to Table TERR 1-1 for a list of riparian sampling sites.

STUDY APPROACH

VEGETATION ALLIANCES AND WILDLIFE HABITATS

The study approach for vegetation alliances and wildlife habitat is provided below.

- Develop vegetation alliance maps of the study area based on CALVEG mapping and vegetation alliance descriptions.[7]
    - Preliminary vegetation alliance information is presented in the PAD, Section 4, Existing Resource Information (SCE 2021), including the following:
        - Section 4.6, Botanical and Wildlife Resources provides a draft map of CALVEG vegetation alliances within 1 mile of the FERC Project boundary; and
        - Section 4.9, Riparian Resources provides a draft map showing CALVEG riparian vegetation alliances along the Project-affected stream segments and Project reservoirs.
- Verify the accuracy of CALVEG data and update vegetation alliances using recent aerial photographs.
- Conduct ground-truthing of vegetation alliances within 1 mile of the FERC Project boundary, concentrating in areas where concerns about vegetation community identification or boundaries arise from review of aerial photographs.
    - Ground-truthing will include documentation of small-scale riparian alliances along Project-affected stream segments (Table TERR 1-1) and around Project reservoirs. Inaccessible areas will be evaluated using aerial photograph review.
- Develop a final Geographic Information System (GIS) map of vegetation alliances and overlay information on Project facilities, construction areas, restoration areas, and the potential enhancement area.
- Develop a final GIS map of riparian vegetation alliances and overlay information on the Project-affected stream segments and Project reservoirs.

[7] The CALVEG system was developed by U.S. 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 the Forest Service in 2014 (Forest Service 2014).

SPECIAL-STATUS PLANTS

For the purposes of this study plan, a special-status plant is defined as any plant, moss, or lichen 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 INF as FSCC are also included.

State of California listed plant species, which are granted status by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA) include state threatened (ST), state endangered (SE), state rare (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); and
- 2B (rare, threatened, or endangered in California, but common elsewhere).

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

- Identify and map occurrences of special-status plants within the study area, based on agency consultation and a review of existing information. Preliminary information is presented in the PAD Section 4.6, Botanical and Wildlife Resources (SCE 2021).
- Develop a list of special-status plant species potentially occurring in the study area based on literature review and agency consultation. A preliminary list is provided in the PAD Section 4.6, Botanical and Wildlife Resources, Table 4.6-2 (SCE 2021).
- 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, endangered species, or forest species of conservation concern 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 vicinity of the Project, two surveys will be conducted during the appropriate bloom period (Table TERR 1-2).

  - Timing of surveys will be verified based on reference population monitoring. SCE will coordinate with resource agencies to identify reference populations and conduct reference population monitoring. The results of reference population monitoring will be provided to agencies to verify the appropriate survey timing.

  - 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.

  - Moss and lichen specimens will be collected and labeled with the date and collection location. Moss and lichen specimens will later be identified to species by a qualified bryologist.

- Develop a comprehensive species list, and a map (i.e., GIS layers) 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 CNDDB.

NON-NATIVE INVASIVE PLANTS

The FEIS for the revision of the INF Land Management Plan defines invasive species, including plants, as “alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health; species that cause, or is likely to cause harm and that is exotic to the ecosystem it has infested” (Forest Service 2019b).

The study approach for NNIPs is provided below.

- Identify and map infestations of NNIPs based on agency consultation and a review of existing information. Preliminary information is presented in the PAD Section 4.6, Botanical and Wildlife Resources (SCE 2021).

- Develop a list of priority NNIPs for focused NNIP surveys in consultation with the Forest Service.

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

- Collect data and report survey results as follows:
    - Date 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 comprehensive species list, and a map (GIS layer) of NNIPs, and overlay information on Project facilities.

HISTORIC AND EXISTING BOTANICAL RESOURCES WITHIN THE INUNDATION ZONES OF PROJECT RESERVOIRS

The study approach for documenting historic and existing botanical resources within the inundation zone of Project reservoirs is provided below.

- Obtain information on the historic location, distribution, size, and species of trees within the historical inundation zone of Project reservoirs:
    - Use Light Detection and Ranging (LiDAR) imagery, aerial photogrammetry, and/or supplemental total station surveys to develop a map (GIS layer) showing the location and distribution of tree stumps within the inundation zones.
    - Obtain information on the size class and species of stumps within inundation zones.
        - Establish transects within the inundation zones of Project reservoirs, from the base (waterline) to the top of the historical inundation zone.
        - Collect the following data for each stump within 5 meters on either side of the transect line:
            - GPS coordinates
            - Photograph of stump
            - Diameter of stump at ground level
            - Species identification
                - Obtain cross-sections of tree stumps (maximum of five per transect, focused on stumps with highest structural integrity).

> Obtain tree cores of representative living trees (at least one core for each species that comprise the tree assemblage in the vicinity of the reservoir, selecting the oldest possible trees). Note: This is dependent on Forest Service authorization to obtain cores from live trees within the Wilderness Area.

> Provide the cross-sections and live tree cores to a qualified dendrochronologist for comparison and determination of species.

- Develop a map (GIS layer) of the location of stumps within the inundation zones, and a table summarizing the number and size of stumps.

- Compare the tree stump cross-sections to the live tree cores and develop a table of the species composition along the transects.

- Obtain information on current plant species composition, distribution, and abundance within the inundation zones of Project reservoirs:

  - Review LiDAR imagery, aerial photogrammetry, and/or supplemental total station data to identify areas within the historic inundation zone that currently support plant communities.

  - Establish transects in areas within the plant communities.

    - To the degree possible, studies at Waugh Lake and Gem Lake will incorporate transects previously established by SCE as part of riparian vegetation studies (Psomas 2017).

    - Transects will begin at the current waterline and extend to the top of the historical inundation zone.

    - Both ends of the transect will be temporarily marked (e.g., with rebar stakes), recorded with a GPS unit with sub-meter accuracy, and photo-documented.

    - 5 x 5-meter sampling plots will be collected along transect. The number and location of plots will vary depending on the length of the transect. The following data will be collected within each sampling plot:

      – GPS coordinates (center point of plot)

      – Photograph of plot

      – List of all plant species/estimated number of individuals or cover, depending on species

  - Percent cover within each sampling plot for graminoids, herbaceous, shrubs, and trees

  - Live tree and shrub species, dbh (for trees), or number of stems and approximate height (for shrubs)

- Develop a map (GIS layer) showing the location of transects and sampling plots, and lists/tables documenting plant species composition, distribution, and abundance.

AQUATIC RESOURCES (WETLAND) DELINEATION

Provided below is the study approach for determining jurisdictional waters of the U.S./state (e.g., wetlands) within the potential enhancement area.

- Conduct an aquatic resources delineation consistent with U.S. Army Corps of Engineers (USACE) protocols:

  - USACE Wetlands Delineation Manual (Environmental Laboratory 1987).

  - A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008).

  - Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region (Version 2.0) (Environmental Laboratory 2008).

- Develop an aquatic resources delineation report and maps consistent with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016).

CHARACTERIZATION OF RIPARIAN COMMUNITY ALONG PROJECT-AFFECTED STREAM SEGMENTS

The study approach for the characterization of riparian community along Project-affected stream segments is provided below:

- Provide an overview of life history requirements of dominant woody riparian species and associated riparian vegetation processes along stream corridors similar to Rush Creek.

  - Based on a review of existing literature, summarize the life history requirements of the dominant woody riparian species occurring along Rush Creek, including: seed initiation (e.g., dispersal, germination, and initial seed/root growth); microsite characteristics necessary for germination (e.g., water table depth, substrate); establishment (survival and growth until maturity); and maturation (e.g., age of maturity, rooting depth, and tree height).

- Summarize patterns of riparian vegetation establishment, including the role hydrological events (magnitude, frequency, timing, flow recession, inundation) in the establishment and/or scouring of riparian vegetation.

- Conduct a field assessment of the riparian communities along Project-affected stream segments. Project-affected stream segments are delineated as long sections of stream with a relatively homogeneous flow regime (e.g., Rush Creek below Rush Meadows Dam to Gem Lake) (Refer to Table TERR 1-1). The stream segments selected for study are those with channels or riparian vegetation that would be responsive to Project-induced changes in flow or sediment regime. Stream segments that are primarily bedrock and not responsive to changes in hydrology or sediment regime (e.g., Horsetail Falls) were not selected for study.

  - Map the extent of riparian vegetation along the selected stream segments (Table TERR 1-1 and Map TERR 1-2) on high-resolution aerial imagery. Based on the species observed, classify riparian communities based on A Manual of California Vegetation (Sawyer et al. 2009).

    - Establish survey transects at riparian sampling sites along Project-affected stream segments.[8]

    - Re-establish transects associated with long-term riparian monitoring along Rush Creek from Rush Meadows Dam to Gem Lake.[9]

    - Establish a minimum of three transects at each of the remaining riparian sampling sites listed in Table TERR 1-1.

      – The location of transects at these riparian sampling sites will be coordinated with the selection of mesohabitat units as part of the AQ 1 – Instream Flow and AQ – 5 Geomorphology technical study plans.

    - Establish 5 x 5-meter sampling plots along each transect. The number and location of plots will vary depending on the length of the transect. The following data will be collected within each sampling plot:

      – GPS coordinates (center point of plot)

      – Photograph of plot

[8] Riparian sampling sites include sites previously established as part of long-term riparian monitoring along Rush Creek below Rush Meadows Dam to Gem Lake, and additional sites in at Project-affected stream segments that are accessible and support wetland and/or riparian vegetation based on existing documentation.

[9] Long-term riparian monitoring transects are monitored consistent with Forest Service Final 4(e) Condition No. 7 – Monitoring (FERC 1997). The next long-term monitoring event is planned for 2022. Historical riparian data, and data collected during the 2022 monitoring event, will be used to meet the requirement of this TSP.

- Percent cover and age class[10] for each dominant woody riparian trees/shrubs, by species
- Percent cover of riparian/wetland herbaceous and graminoid plants, by species.
- Size classes of the substrate present (bedrock, boulder, cobble, gravel, sand, silt).

- Characterize the relationship between the riparian vegetation and flow conditions in each selected stream segment included in AQ 1 – Instream Flow studies:
  - Using the historical,[11] existing,[12] Proposed Project,[13] and unimpaired[14] hydrology (developed in the AQ 2 – Hydrology TSP) at each of the selected stream segments, complete the following hydrology analyses:
    - Annual Hydrology Patterns – Annual hydrographs of the monthly average daily flows by water year type;
    - Recurrence Intervals – Flood frequency curves for each flow condition to compare the magnitude and frequency of peak high flow events;
    - Timing of High Flows – The numbers of days that the impaired and unimpaired flows are exceeded (1) by month, (2) by water year type and (3) all years combined; and
    - Recession Rates (rate of change in stage over time [days]) – Recession rates of spring/early summer flows during the time of spring seed release and seed setting (during the receding limb of the hydrograph) by water year type.
      - Flows will be converted to stage using the stage-discharge relationships developed for the AQ 1 – Instream Flow studies.

[10] Age class structure will be determined based on categories of shrub stem densities per individual and tree diameters, as follows: Young (Y): shrubs with less than 10 stems per individual or trees with diameters (diameter at breast height (DBH) less than 3 inches; Medium-aged (M): shrubs with between 10 and 60 stems per individual or trees with DBHs between 3 and 9 inches; and Old/Mature (O): shrubs with more than 60 stems per individual or trees with DBHs greater than 9 inches.

[11] The historical hydrology (2000-2011 POR) represents instream flows and Project operation under the existing license conditions prior to implementation of the seismic restrictions in 2012.

[12] The existing hydrology (2012-2019 POR) represents instream flows and Project operation under both the existing license conditions and implementation of the seismic restrictions in 2012.

[13] The Proposed Project hydrology (2000-2019) represents synthesized instream flows and Project operations under the Proposed Project.

[14] The unimpaired hydrology (2000-2019) represents synthesized instream flows in Rush Creek without the influence of the Rush Creek Project.

- Develop a summary of relationship between existing inundation characteristics (e.g., frequency, depth, and width of inundation) and the distribution of dominant riparian species across the floodplain at each of the selected Project-affected stream segments in coordination with the AQ 1 – Instream Flow TSP.

DOCUMENTATION OF RIPARIAN COMMUNITY WITHIN THE POTENTIAL ENHANCEMENT AREA

- Conduct a field assessment to document riparian communities within the potential enhancement area (refer to Map TERR 1-1).
    - Map the extent of riparian vegetation within the potential enhancement area using high-resolution aerial imagery and/or supplemental total station data. Based on the species observed, classify riparian communities based on A Manual of California Vegetation (Sawyer et al. 2009).
    - Conduct an inventory of dominant woody riparian shrubs and trees within the enhancement area. Data collected will include:
        - Overall percent cover.
        - Percent cover and age class[15] for all dominant woody riparian trees/shrubs, by species.
- Develop a final map of riparian communities and tables summarizing the results of the inventory.

REPORTING

- Study methods and results will be documented in a TERR 1 – Botanical Resources Technical Study Report (TSR). The TSR will include summary tables and maps, as appropriate.
- GIS data and tabular data will be provided to USFS with the draft TSR. This data will also be provided to other resource agencies and interested stakeholders, upon request.

[15] Age class structure will be determined based on categories of shrub stem densities per individual and tree diameters, as follows: Young (Y): shrubs with less than 10 stems per individual or trees with diameters (diameter at breast height (DBH) less than 3 inches; Medium-aged (M): shrubs with between 10 and 60 stems per individual or trees with DBHs between 3 and 9 inches; and Old/Mature (O): shrubs with more than 60 stems per individual or trees with DBHs greater than 9 inches.

SCHEDULE

Date	Activity
July–August 2022	Collect data to characterize riparian vegetation at long-term riparian monitoring sites (consistent with USFS 4[e] Condition 7)
June–September 2023	Conduct field surveys
October 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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TABLES

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Table TERR 1-1. Riparian Vegetation Sampling/Study Sites.

Stream Segment Name	Segment Length (miles) / River Miles (RM)	Sampling/Study Site River Mile / Site ID
Rush Creek		
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65 (includes long-term baseline riparian monitoring sites)[1]
Gem Lake	0.93 (RM 19.48–20.41)	—
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	—
Agnew Lake	0.58 (RM 18.60–19.18)	—
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.05 / RC17.05 RM 17.55 / RC17.55
Silver Lake	0.83 (RM 15.89–16.72)	—
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2
South Rush Creek		
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15

[1] Includes long-term baseline riparian monitoring sites that have historically been monitored consistent with Forest Service Final 4(e) Condition No. 7 – Monitoring (FERC 1997).

Table TERR 1-2. Blooming Periods for Special-Status Plants Identified by Resource Agencies as Potentially Occurring in the Rush Creek Project Vicinity.

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Claytonia megarhiza fell-fields claytonia												
Pinus albicaulis whitebark pine												
Sabulina stricta bog sandwort												
Agrostis humilis alpine bentgrass												
Arabis repanda var. *greenei* Greene's rockcress												
Astragalus johannis-howellii Long Valley milk-vetch												
Astragalus lemmonii Lemmon's milk-vetch												
Astragalus monoensis Mono milk-vetch												
Astragalus serenoi var. *shockleyi* Shockley's milk-vetch												
Boechera bodiensis Bodie Hills rockcress												
Boechera cobrensis masonic rockcress												
Boechera tularensis Tulare rockcress												

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Botrychium ascendens upswept moonwort												
Botrychium crenulatum scalloped moonwort												
Botrychium lineare slender moonwort												
Botrychium lunaria common moonwort												
Botrychium paradoxum paradox moonwort												
Calyptridium pygmaeum pygmy pussypaws												
Carex davyi Davy's sedge												
Carex idahoa Idaho sedge												
Carex petasata Liddon's sedge												
Carex praticola northern meadow sedge												
Carex scirpoidea ssp. *pseudoscirpoidea* western single-spiked sedge												
Carex stevenii Steven’s sedge												
Carex vallicola western valley sedge												

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cinna bolanderi Bolander's woodreed							■	■	■			
Cusickiella (=Draba) quadricostata Bodie Hills cusickiella					■	■	■					
Cymopterus globosus globose cymoptera			■	■	■	■						
Draba asterophora var. *asterophora* Tahoe draba							■	■				
Draba cana canescent draba							■					
Draba cruciata Mineral King draba						■	■	■				
Draba incrassata Sweetwater Mountains draba							■	■				
Draba praealta tall draba							■	■				
Dryoptera filix-mas male fern							■	■	■			
Erigeron aequifolius Hall's daisy						■	■	■				
Erigeron uncialis var. *uncialis* limestone daisy					■	■	■					
Eriogonum mensicola Pinyon Mesa buckwheat							■	■	■			
Eriogonum nutans var. *nutans* nodding buckwheat					■	■	■	■	■			

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Festuca minutiflora small-flowered fescue							■					
Hackelia brevicula Poison Canyon stickseed							■	■				
Hulsea brevifolia short-leaved hulsea					■	■	■	■				
Hulsea vestita ssp. *inyoensis* Inyo hulsea				■	■	■						
Jamesia americana var. *rosea* fivepetal (rosy-petalled) cliffbush					■	■	■	■	■			
Kobresia myosuroides (= bellardii) seep kobresia								■				
Lupinus duranii Mono Lake lupine					■	■	■	■				
Lupinus lepidus var. *culbertsonii* Hockett Meadows lupine							■	■				
Lupinus padre-crowleyi Father Crowley's lupine							■	■				
Meesia uliginosa broad-nerved hump moss							■	■	■	■		
Mentzelia torreyi Torrey's blazing star						■	■	■				
Monardella beneolens sweet-smelling monardella						■	■	■	■			
Parnassia parviflora small-flowered grass-of-Parnassus								■	■			

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pedicularis crenulata scalloped-leaved lousewort												
Petrophyton caespitosum ssp. *acuminatum* marble rockmat												
Phacelia monoensis Mono County phacelia												
Physaria ludoviciana silver bladderpod												
Polyctenium williamsiae Williams' combleaf												
Potamogeton praelongus white-stemmed pondweed												
Potamogeton robbinsii Robbins' pondweed												
Potentilla pulcherrima beautiful cinquefoil												
Ranunculus hydrocharoides frog's-bit buttercup												
Salix brachycarpa var. *brachycarpa* short-fruited willow												
Sclerocactus polyancistrus redspined fishhook cactus												
Silene oregana Oregon campion												
Sphaeromeria potentilloides var. *nitrophila* fivefinger chickensage (alkali tansy-sage)												

Scientific/Common Name	Blooming Period											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tetradymia tetrameres dune horsebrush												
Thelypodium integrifolium ssp. *complanatum* foxtail thelypodium												
Thelypodium milleflorum many-flowered thelypodium												
Trichophorum pumilum little bulrush												
Trifolium bolanderi Bolander's clover												
Trifolium dedeckerae (= kingie ssp. *dedeckerae)* Dedecker's clover												
Triglochin palustris marsh arrow-grass												
Viola pinetorum ssp. *grisea* gray-leaved violet												
Viola purpurea ssp. *aurea* golden violet												

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MAPS

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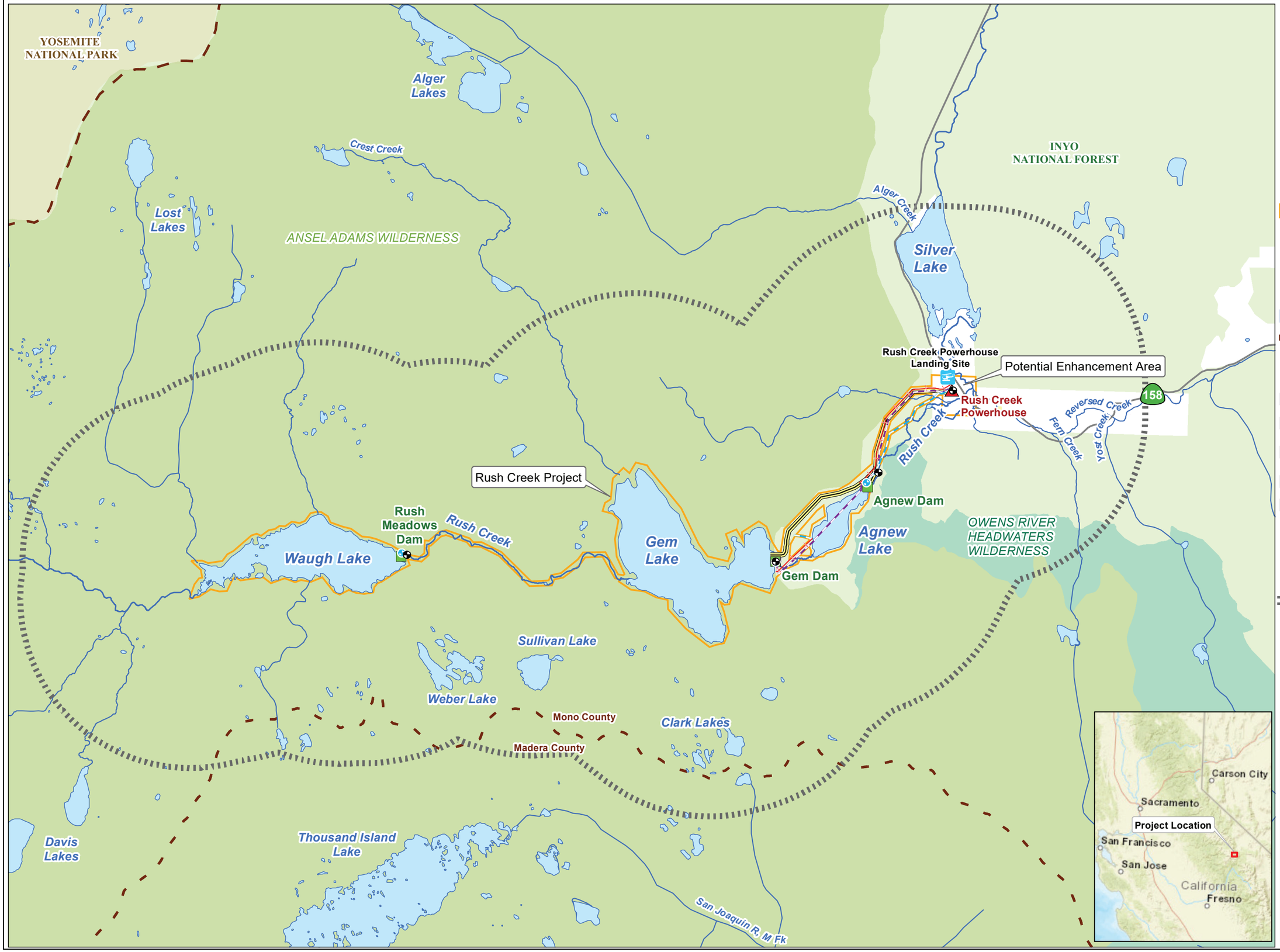

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Stream Gage
- Reservoir Gage
- Helicopter Landing Site
- Power Line
- Communication Line
- Tramway
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary

Land Jurisdiction and National Wilderness Areas/Parks*

- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

TERR-1 Study

- TERR-1 Study Area (1-Mile Buffer of FERC Boundary)

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Rush Creek Project (FERC 1389)

TERR 1-1

Study Area

0 1,250 2,500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 9/10/2021

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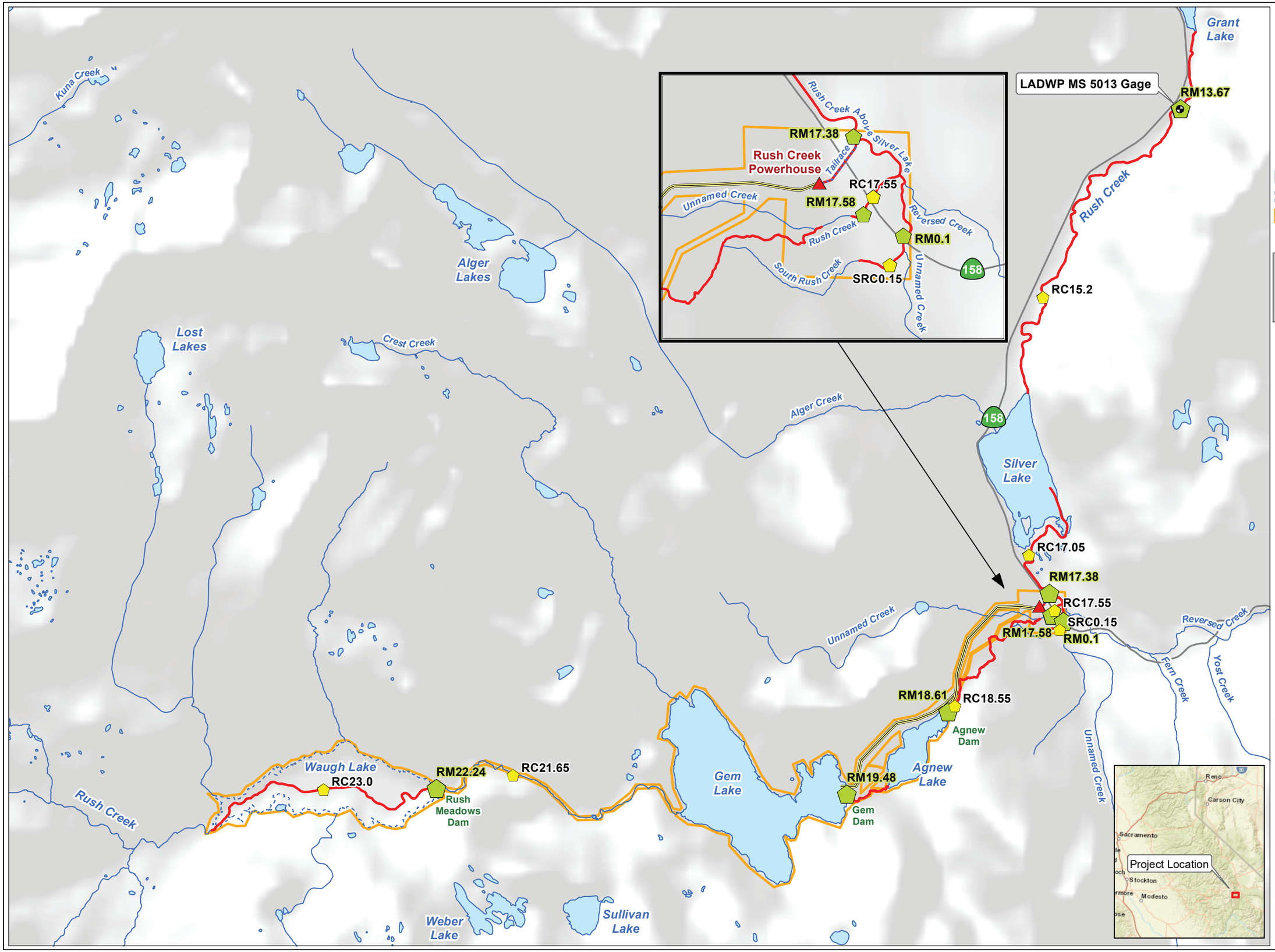

SCE Facilities
- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features
- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

Study Sites and Reaches
- Hydrology Analysis Site
- Geomorphology/Riparian Site
- Instream Flow Modeling Reaches

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Rush Creek Project (FERC 1389)

Map TERR 1-2

Analysis and Survey Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/3/2021

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TERR 2 – WILDLIFE RESOURCES TECHNICAL STUDY PLAN

Rush Creek Hydroelectric Project
FERC Project No. 1389

May 2022

TERR 2 – Wildlife Resources Technical Study Plan

POTENTIAL RESOURCE ISSUES

- Special-status wildlife species and their habitats.

PROJECT NEXUS

- Direct loss or degradation of wildlife habitats.
- Disturbance or direct loss of special-status wildlife species.

RELEVANT INFORMATION

The following information is available regarding wildlife resources in the vicinity of the Rush Creek Project (refer to Southern California Edison Company's [SCE] Pre-Application Document [PAD] Section 4.6 for a summary of wildlife resource information [SCE 2021]):

- Wildlife habitats and common wildlife species present within 1 mile of the Federal Energy Regulatory Commission (FERC) Project boundary based on a crosswalk from U.S. Forest Service's (Forest Service) Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) alliances (Forest Service 2009) to California Department of Fish and Wildlife's (CDFW) California Wildlife Habitat Relationship (CWHR) wildlife habitats (CDFW 2020a).
- Known occurrences of special-status wildlife in the vicinity of the Project based on the CDFW California Natural Diversity Database (CNDDB) (CDFW 2020b); CDFW list of species considered California Fully Protected under the California Fish and Game Code (CDFW 2020c); CDFW Sierra Nevada Bighorn Sheep Recovery Program Annual Reports (CDFW 2015, 2018); Forest Service Pacific Southwest Region 5 Inyo National Forest (INF) species of conservation concern list (Forest Service 2019); U.S. Fish and Wildlife Service (USFWS) Sierra Nevada Bighorn Sheep Recovery Plan (USFWS 2007).
- Special-status wildlife species potentially occurring within CWHR designations based on *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).
- Critical Habitat present in the vicinity of the Project for Sierra Nevada Bighorn Sheep (USFWS 2008).
- Location of Project facilities, including transmission lines and power lines.
- Supplemental information (e.g., habitat descriptions and special-status species occurrences) obtained from a review of the following Project-specific sources:
    - FERC's Environmental Assessment, Rush Creek Project (FERC Project No. 1389) (FERC 1992);

- SCE's Survey Report for Phase I and Phase II Projects (SCE 2017, 2018a); and
- SCE's Survey Report for Gem Dam Value Upgrade (SCE 2020).

POTENTIAL INFORMATION GAPS

- Updated information on wildlife habitats within 1 mile of the FERC Project boundary and within 300 feet of proposed helicopter flight paths.
- Updated information on wildlife use within the FERC Project boundary, along helicopter flight paths, and within the potential enhancement area.[1]
- Information on Sierra Nevada bighorn sheep distribution and use of the FERC Project boundary and adjacent Critical Habitat areas.
- Data on Project transmission line pole and power line pole configurations to determine if they are consistent with guidelines for avoidance of avian mortalities.
- Information on the location of bat roost in Project facilities.

STUDY OBJECTIVES

- Update CWHR habitats within 1 mile of the FERC Project boundary and within 300 feet of proposed helicopter flight paths based on CALVEG vegetation alliances developed as part of the TERR 1 – Botanical Resources Technical Study Plan (TSP).
- Update information on special-status wildlife species potentially occurring in CWHR habitats within 1 mile of the FERC Project boundary.
- Consult with resource agencies to determine Sierra Nevada bighorn sheep distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.
- Conduct wildlife reconnaissance survey to characterize wildlife use within the FERC Project boundary[2] and within the potential enhancement area.
- Consult with resource agencies and other local raptor experts to determine historic and recent raptor nest records present in the FERC Project boundary and along proposed helicopter flight paths and to determine regional nesting chronology.

[1] The potential enhancement area includes portions of the Rush Creek and South Rush Creek channels upstream and downstream of the State Route 158 crossing. The purpose of the potential enhancement is to address local flooding of residences during high-flow events. Refer to Map TERR 2-1 and PAD Map 3-5.

[2] Wildlife reconnaissance surveys along the Project-affected streams will only be conducted within stream segments defined in Table TERR 1-1 of the TERR 1 TSP.

- Document potential nesting habitat and raptor nests along the proposed helicopter flight paths.

- Determine whether Project transmission line and power line pole configurations are consistent with guidelines for the avoidance of avian mortalities.

- Document the presence of bat roosts at Project facilities.

- Proposed studies (objectives) for special-status amphibians are provided in AQ 7 – Special-Status Amphibians TSP. The Project is outside the range of any special-status reptiles.

EXTENT OF STUDY AREA

- Refer to Map TERR 2-1 for the wildlife resources study area. The study area for:

    - Updating CWHR habitat and special-status wildlife species occurrence includes lands within 1 mile of the FERC Project boundary.

    - Sierra Nevada bighorn sheep distribution and use of lands includes lands within the FERC Project boundary and adjacent Critical Habitat.

    - Wildlife reconnaissance survey includes lands within the FERC Project boundary[3] and within the potential enhancement area.

    - Documentation of raptor nests extends 300 feet on either side of the proposed helicopter flight paths.

    - Evaluation of potential avian mortality includes Project transmission lines and power lines.

    - Bat surveys include Project facilities with the potential to support roost sites.

- 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

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 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).

[3] Wildlife reconnaissance surveys along the Project-affected streams will only be documented within stream segments as defined in Table TERR 1-1 of the TERR 1 TSP.

Special-status wildlife designated by INF as Forest Species of Conservation Concern (FSCC) are also included.

State of California listed wildlife species which are granted status by 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 transmission line tower and power line pole configurations, and special-status bat surveys is provided below.

SPECIAL-STATUS WILDLIFE

- Cross-reference CALVEG vegetation alliances identified as part of the TERR 1 – Botanical Resources TSP 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 CALVEG–CWHR Crosswalk table.

- Develop an updated Geographic Information System (GIS) map of wildlife habitats and overlay information on Project facilities, construction areas, proposed helicopter flight paths, restoration areas, and the potential enhancement area.

- Consult with resource agencies to obtain information on Sierra Nevada bighorn sheep distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.

- Consult with resource agencies and other local raptor experts to determine historic and recent raptor nest records within the FERC Project boundary and proposed helicopter flight paths and to determine regional nesting chronology.

- Identify/map potential raptor nesting habitat and observation point to support raptor surveys.

    - Conduct a desktop review of CWHR maps and aerial photographs to identify potential raptor nesting habitat along the helicopter flight paths. The focus of the review will be to identify areas that support the following nesting habitat characteristics for raptors potentially occurring in the Study Area:

        - For cliff-nesting species (i.e., golden eagle, peregrine and prairie falcons): Cliffs with prominent escarpments that provide a view of surrounding environment and updrafts (Kochert et al. 2002), with the cliff face usually at least 70 feet in height (Pagel et al. 1991; White et al. 2002). Nests are usually, but not always within the upper half of the cliff face (Kochert et al. 2002; Steenhof 2013).

    - For tree-nesting species (i.e., northern goshawk, osprey, and bald eagle): Trees greater than 24 inches dbh (Jackman and Jenkins 2004, Woodbridge and Hargis 2006, Bierregaard et al. 2016). Northern goshawks prefer stands of trees with dense canopy cover (Woodbridge and Hargis 2006), while osprey and bald eagle will nest in more open stands (Jackman and Jenkins 2004, Bierregaard et al. 2016).

  - Develop a map of potential raptor nesting habitat along the helicopter flight path.

  - Preliminary observation points and approximate viewsheds for the nesting raptor survey are provided on Map TERR 2-2**.** Following completion of the desktop review, observation points will be refined, as necessary, to maximize survey coverage of suitable nesting habitat.

- Conduct wildlife reconnaissance survey 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 the CDFW's Special Animals List and cross-referenced with SCE's Master Species List (CDFW 2021; SCE 2018b).

  - For each special-status species observed, a CNDDB field survey form will be completed and submitted to CDFW.

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

- Conduct raptor nest surveys during the regional nesting period, as determined through consultation with agencies and local raptor experts.

  - To the extent possible, surveys will be conducted in conjunction with wildlife reconnaissance surveys.

  - Surveys will be conducted twice during the nesting season and spaced at least 30 days apart, per the guidelines specified in Pagel 1991 and Pagel et al. 2010. Surveys will be conducted when the Study Area is safely accessible following snowmelt.

    - Surveys will not be conducted during the incubation period when raptors are more sensitive to disturbance.

- Surveyors will use existing trails and observation points to survey suitable raptor habitat along the helicopter flight paths. Surveys will be conducted by a qualified biologist with experience in conducting raptor nest surveys.
    - While walking existing trails, surveyors will stop at open vantage points and, using binoculars, will thoroughly scan all visible potential nesting habitat.
    - Binoculars and a spotting scope (at least 45x magnification) will be used to view all visible potential nesting habitat from the observation points.
- During raptor nest surveys, the biologist will verify potential raptor nesting habitat mapped during the desktop review and make refinements, as necessary.
- If a nest is identified, the species, nest location, and nest status will be determined. The nest location will be documented with a GPS unit or will be triangulated using a compass bearing and an aerial photograph. To the extent possible, the following information will be collected for each nest observed:
    - Date, start time, and end time of the observation period;
    - Weather conditions;
    - Nest coordinates, nesting substrate, and nest elevation;
    - Photographs of the nest location;
    - Nest status (i.e., occupied, unoccupied); and
    - Age class of any nestlings observed.
- Habitats not visible from observation points will not be surveyed, but any raptor nesting behavior observed in the vicinity will be recorded. For example if an adult is observed making repeated flights to a potential nest location carrying nesting material (e.g., sticks) or prey items, it will be noted on field datasheets and documented on Project maps.

- Surveys will not be conducted during periods of heavy rain, snow, high winds, severe cold weather, severe heat, or heavy wildfire smoke. These conditions can reduce the biologist's ability to detect a nest and also increase risk of exposure to eggs/nestlings if adults flush off the nest.
- Raptor nest survey results will be evaluated and, if data gaps exist, SCE will consult with resource agencies to determine next steps or alternate survey methods.
- Develop a final map showing the location of potential raptor nesting habitat and nests identified within the Study Area.

- Collect and summarize incidental observations of any special-status species during all field surveys completed in support of the relicensing of the Rush Creek Project.

- Develop an updated list of special-status wildlife species potentially occurring in CWHR habitats.

EVALUATION OF PROJECT TRANSMISSION LINE AND POWER LINE POLE CONFIGURATIONS

- Document the configuration of transmission line and power line 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 transmission lines and power lines 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.

SPECIAL-STATUS BATS

Identify Facilities Potentially Supporting Bat Roosts

- 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 Section 2.0 of the PAD (SCE 2021)

- Conduct a preliminary visual 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.

Conduct Roost Survey

Visual Roost Survey

- Conduct a visual roost survey at Project facilities identified as potentially supporting roosting bats. The assessment will be conducted (July–September) during the end of 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 sign (e.g., skeletons, dead young, placentas, guano deposits, urine staining, and culled insect parts) and/or live bats. Special-status bat species potentially occurring in the study area are easily visually identifiable. If live bats are observed, biologists will enter to only photograph the

roost. The species present, roost status (day roost/maternal), and number of adults and/or juveniles will be determined from review of the photograph.

- If live bats are not observed, but bat roost sign is present, spotlights and high-powered flashlights will be used in combination with binoculars for more detailed examination of the potential roost sites.

- To prevent the introduction of *Pseudogymnoascus destructans*, a fungal pathogen causing the emerging white-nose syndrome responsible for widespread mortality in North American bats, methods described in the National White-nose Syndrome Decontamination Protocol (White-nose Syndrome Response Team 2018) will be implemented to decontaminate clothing and equipment prior to entering potential roosts.

- A map and table will be developed documenting the location of bat roosts and species present, if applicable.

- If bat roosts are present but the species cannot be determined visually, then species will be determined using guano DNA sampling (if suitable fresh guano is available). Specific methods for guano DNA sampling are provided below.

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 map and table will be developed identifying the location of guano DNA sampling and species present, if applicable.

REPORTING

- Study methods and results will be documented in a TERR 2 – Wildlife Technical Study Report (TSR). The TSR 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
January–April 2023	Consult with resource agencies to obtain information on Sierra Nevada bighorn sheep and the location of historic or recent raptor nests and site-specific raptor nesting chronology
June–September 2023	Conduct wildlife reconnaissance surveys, raptor nest surveys, and transmission line/power line pole evaluation
July–September 2023	Conduct bat surveys
October 2023–January 2024	Analyze data and prepare draft report
February 2024	Distribute draft report to stakeholders
March–May 2024	Stakeholders review and provide comments on draft report (90 days)
June–July 2024	Resolve comments and prepare final report
August 2024	Distribute final report in Draft License Application

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MAPS

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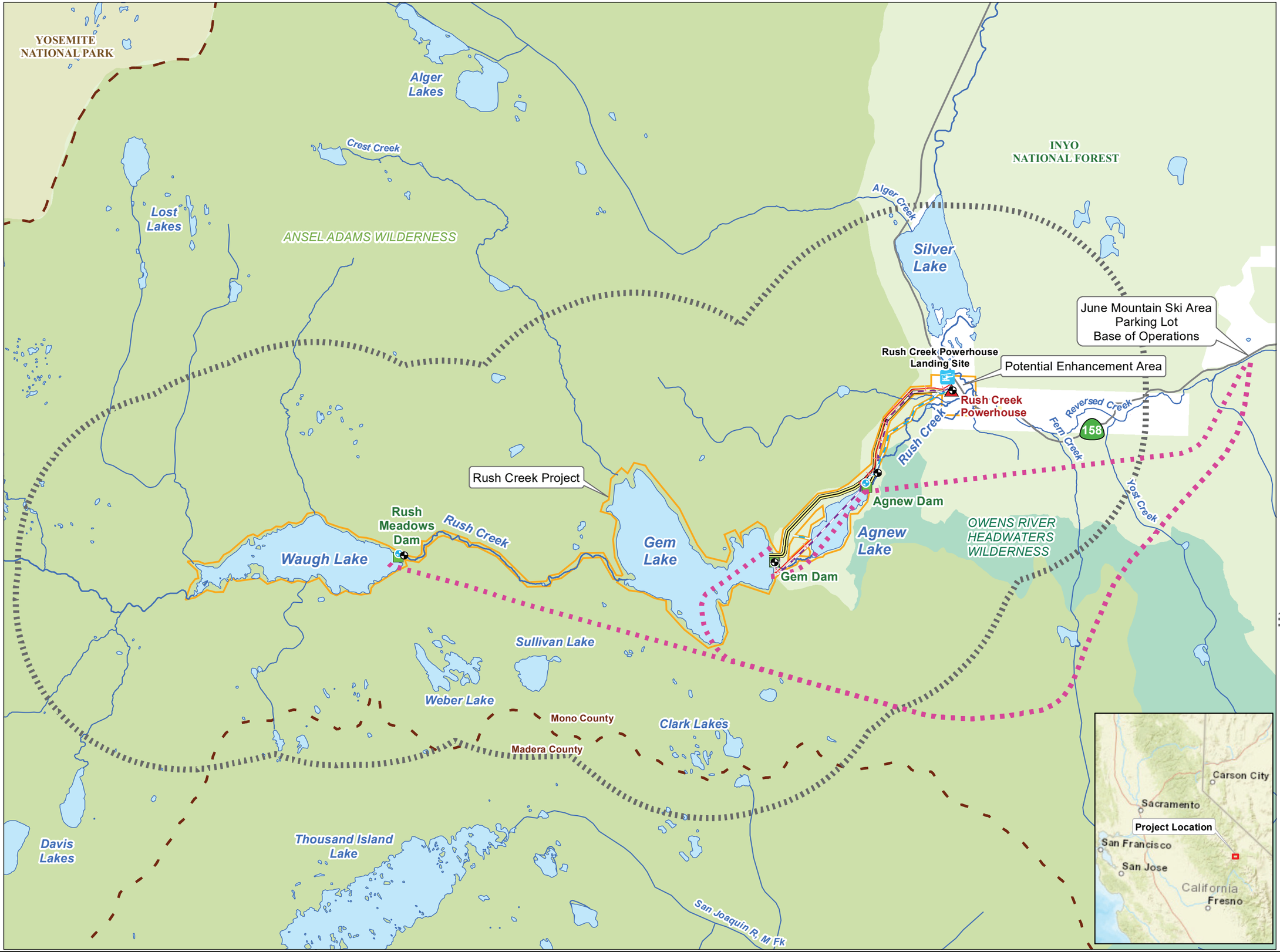

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Stream Gage
- Reservoir Gage
- Helicopter Landing Site
- Power Line
- Communication Line
- Tramway
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary
- Approximate Helicopter Flight Path

Land Jurisdiction and National Wilderness Areas/Parks*

- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

TERR-2 Study

- TERR-2 Study Area (1-Mile Buffer of FERC Boundary)

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Rush Creek Project (FERC 1389)

TERR 2-1

Study Area

0 1,250 2,500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 9/10/2021

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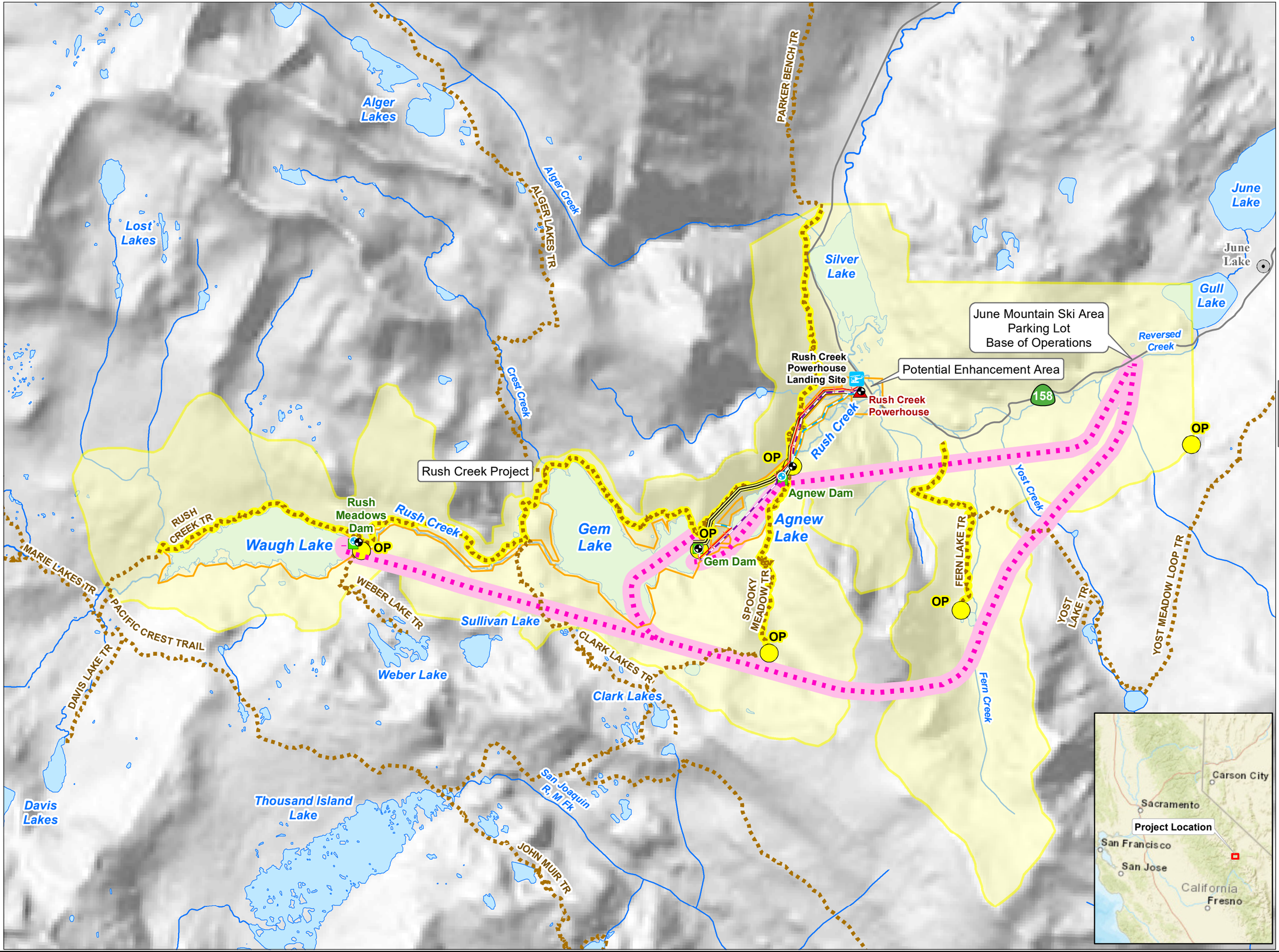

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Stream Gage
- Reservoir Gage
- Helicopter Landing Site
- Power Line
- Communication Line
- Tramway
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- Potential Access Trails

TERR-2 Raptor Nest Survey

- Proposed Raptor Observation Points (OPs)
- Raptor Survey Trails
- Viewshed from OPs*

*Viewshed from OPs or Trails Limited to 2 Miles (Scope Limits)

Raptor Study Area

- Approximate Helicopter Flight Path
- 300-foot Buffer

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Rush Creek Project (FERC 1389)

TERR 2-2

Raptor Nest Survey Observation Points and Associated Viewsheds

0 1,250 2,500 Feet

Date: 4/28/2022

Projection: UTM Zone 11
Datum: NAD 83

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APPENDIX C

Southern California Edison Company's Response to Comments on Scoping Document 1

Filed with FERC on May 20, 2022

FERC Accession No. 20220520-5230

Document Accession #: 20220520-5230 Filed Date: 05/20/2022

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Wayne P. Allen
Principal Manager
Regulatory Support Services

Filed Electronically

May 20, 2022

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

Subject: Rush Creek Hydroelectric Project (FERC Project No. 1389-059)
Response to Comments on Scoping Document 1

Dear Secretary Bose:

On December 16, 2021, Southern California Edison Company (SCE) filed with the Federal Energy Regulatory Commission (Commission or FERC) a Pre-Application Document (PAD) and Notice of Intent (NOI) to seek a new license for the Rush Creek Hydroelectric Project, FERC Project No. 1389 (Project). On February 14, 2022, Commission staff issued Scoping Document 1 (SD1) for the Project's relicensing, in which it solicited comments from relicensing participants on staff's preliminary list of issues and alternatives to be evaluated in the National Environmental Policy Act (NEPA) document.[1]

In response, a number of resource agencies and other relicensing participants filed comments on SD1 on a variety of topics. In particular, the U.S. Forest Service (USFS) filed comments on FERC's authority to renew a license within the Ansel Adams Wilderness (AAW) and consideration of project decommissioning as an alternative to relicensing, among other topics. SCE provides this limited response to address USFS's comments on these issues prior to FERC's issuance of SD2 on May 30, 2022.[2]

Relicensing Jurisdiction in the Ansel Adams Wilderness

USFS has questioned FERC's authority to relicense the Project because some of its structures lie within the AAW; in the USFS's view, this leaves FERC "without a clear pathway to authorization."[3] SCE respectfully disagrees with this view. The legal basis for project

[1] Scoping Document 1 for the Rush Creek Hydroelectric Project, Project No. 1389-059 (issued Feb. 14, 2022) [hereinafter "SD1"].

[2] *Id.* at 30; *see also* 18 C.F.R. § 5.10 (providing for Scoping Document 2 to be issued within 45 days of the deadline for comments on Scoping Document 1).

[3] Forest Service Comments on the Pre-Application Document, FERC Scoping Document 1, and New Study Requests for the Rush Creek Hydroelectric Project at 2 (Apr. 14, 2022) [hereinafter "USFS Comments"].

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authorization is clear from the text of the Wilderness Act and has long been recognized in the FERC record.

USFS notes that the Wilderness Act, 16 U.S.C. § 1133(c), generally prohibits "structure[s] or installation[s]" within designated wilderness.[4] The Act recognizes two exceptions to this prohibition, however. The first exception authorizes structures or activities "necessary to meet minimum requirements for the administration of the area for the purpose of" the statute.[5] The second exception makes the prohibition "subject to existing private rights."[6] For purposes of the scoping process, FERC need only consider this second exception as it alone supports relicensing jurisdiction.

When the Wilderness Act was enacted in 1964, it was well understood that the protection for existing private rights would extend to federally licensed hydropower projects. In a letter to the House Committee on Interior and Insular Affairs, the chairman of the Federal Power Commission, FERC's predecessor, offered his views on the bills that formed the basis of the final Wilderness Act.[7] The chairman praised those bills because they "specifically preserve[d] existing private rights in lands placed in the wilderness system," and "clearly would protect a licensee's right to continue the use of any such lands under authority of a license previously issued by the Commission."[8] To the same ends, the chairman recommended the bills because they would not "vacate or rescind any power withdrawal or power reservation created prior to its enactment."[9]

FERC has consistently followed this original understanding in later exercises of its licensing authority. While FERC will deny licenses for *new* projects in wilderness areas,[10] it has also consistently reauthorized projects licensed and constructed prior to the designation of the wilderness area.[11] FERC's interpretation of the Wilderness Act aligns with USFS's own policy to permit relicensing of projects that pre-date wilderness designation.[12]

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4 *See id.* at 3 (quoting 16 U.S.C. § 1133(c)).

5 16 U.S.C. § 1133(c).

6 *Id.*

7 H.R. Rep. No. 88-1538, 1964 WL 4863, (1964), *reprinted in* 1964 U.S.C.C.A.N. 3615, 3622.

8 *Id.* at 3629.

9 *Id.* The Federal Power Act's "power site reservation" provision protects the rights of federal licensees in the use of federal lands. 16 U.S.C. § 818.

10 *See Premium Energy Holdings, LLC*, 167 FERC ¶ 62,162 at PP 1-7 (2019).

11 *See, e.g.*, *PPL Mont.*, 121 FERC ¶ 62,198 at PP 1-2, 14, 14 n.10 (2007); *see also Va. Elec. Power Co.*, 123 FERC ¶ 62.222, at P 18 n.12 (2008).

12 *See* Forest Service Handbook 2709.15: Hydroelectric Handbook § 62.41 at 16-17 (2009), https://www.fs.fed.us/im/directives/fsh/2709.15/2709.15_60.doc.

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In this case, the existing private rights consist of the Commission's license, originally issued in 1939,[13] and the accompanying power site reservation, which was created statutorily in 1936 when SCE's predecessor applied for the license[14]—both of which have existed, uninterrupted, well in advance of the Wilderness Act and Congress' establishment of the Minarets Wilderness (which in the area of the Project was subsequently redesignated as AAW). And SCE's emerging relicensing proposal for the Project is well within the scope of the license and the Federal Power Act itself.[15]

While these facts alone address USFS's relicensing concern, it bears noting that both the Commission and USFS were well aware during the prior relicensing process in the 1990s that the Project pre-dated designation of the AAW.[16] Both agencies therefore "accepted" the project works "as non-conforming uses" "[b]ecause the project facilities were built before the establishment of the Minarets Wilderness," now known as the AAW.[17] For decades now, SCE and numerous other stakeholders have relied on this interpretation of FERC's jurisdiction over the project,[18] and suggestions to now disavow that interpretation represent an untimely collateral attack on FERC's prior decision.[19]

Finally, the *High Sierra Hikers* decision cited by USFS is simply inapposite in this case because it does not address the statutory protections for prior existing rights.[20] Nothing in that opinion

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[13] *See S. Cal. Edison Co.*, 78 FERC ¶ 61,109, at p. 61,380 (1997); Nineteenth Annual Report of the Federal Power Commission at 49-50 (1939).

[14] *See* Seventeenth Annual Report of the Federal Power Commission at 33 tbl. 1 (1937); 16 U.S.C. § 818 ("Any lands of the United States included in any proposed project under the provisions of this subchapter shall *from the date of filing of application therefor* be reserved from entry, location, or other disposal under the laws of the United States until otherwise directed by the Commission or by Congress." (emphasis added)); *id.* (establishing a power site reservation in which the licensee has the right "to enter upon, occupy, and use any part or all of said lands necessary, in the judgment of the Commission, for the purposes of this subchapter, which right shall be expressly reserved in every patent issued for such lands; and no claim or right to compensation shall accrue from the occupation or use of any of said lands for said purposes.").

[15] *E.g.*, 16 U.S.C. § 803(c) (requiring SCE as licensee to "maintain the project works in a condition of repair adequate . . . for the efficient operation of" the Project).

[16] *See S. Cal. Edison Co.*, 78 FERC ¶ 61,109, 61,380 (1997) ("The Commission issued the original license for the Rush Creek Project in 1939.").

[17] FERC, Environmental Assessment for Hydropower License: Rush Creek, FERC Project No. 1389-001, California at 28 (1992).

[18] *See, e.g.*, *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 516 (2009) (agency action is arbitrary and capricious when it fails to account for serious reliance interests).

[19] *See City of Tacoma v. Taxpayers of Tacoma*, 357 U.S. 320, 335-37 (1958); *see also Jeffrey Lake Dev., Inc.*, 161 FERC ¶ 61,184 at P 10 (2017).

[20] *See* USFS Comments at 1 ("As decided in *High Sierra Hikers v. U.S. Forest Service*, reauthorizing non-conforming structures, particularly dams, is prohibited in designated Wilderness except as specifically provided for in the Wilderness Act, or an amendment thereto.").

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indicates that the small dams at issue were ever licensed under the Federal Power Act; in fact, no one seemed responsible for the dams at all.[21]

Project Decommissioning

USFS has also asked FERC "to include a full Project decommissioning as an alternative in [its] environmental analysis."[22] USFS's views appear predicated largely on its misunderstanding of the Wilderness Act as applied to the Project,[23] and, consequently, there is no basis to assess decommissioning once that misunderstanding is corrected.

Even if USFS's request for the Commission to identify decommissioning as a reasonable alternative in Scoping Document 2 (SD2) is not wholly based on its Wilderness Act concerns, the Commission should not include Project decommissioning as a reasonable alternative to be analyzed in its NEPA process. SCE has stated its unequivocal intent to seek a new license for the Project.[24] This Project offers valuable carbon-free capacity and energy to SCE's generation portfolio, supports local recreation, is strategically located, provides local reliable power and energy during islanding events, and will become more valuable as the electric grid continues to transition to non-emitting resources. SCE is firmly committed to continuing to operate and maintain the Gem Lake development of the Project through a new license term.

In addition, listing Project decommissioning as an alternative in the relicensing effort would run afoul of Commission precedent, which maintains that decommissioning is not an effect of project relicensing, but "is a separate action that may occur at some point in the future, with effects that can be described in hypothetical terms but cannot be analyzed absent more specific information about when and how the project may be decommissioned."[25] For these reasons, the Commission has determined it is inappropriate to speculate about possible decommissioning measures during relicensing.[26] Rather, it has appropriately found that it is premature to undertake an environmental analysis of decommissioning absent a specific decommissioning proposal from the licensee.[27]

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[21] *See High Sierra Hikers Ass'n v. U.S. Forest Serv.*, 436 F. Supp. 2d 1117, 1139 (E.D. Cal. 2006) ("the dam has no owner and no utility other than stream flow regulation").

[22] USFS Comments at 7.

[23] *See id.* at 6 ("It is unclear whether FERC possesses a pathway to resolve Gem's operation absent congressional approval. Therefore, we believe it is appropriate . . . to consider all possible alternatives in FERC's environmental analysis, including decommissioning all non-conforming elements within wilderness.").

[24] Notice of Intent to File Application for New License at 1, Project No. 1389-059 (filed Dec. 16, 2021); *see also* 18 C.F.R. § 5.5(b)(4).

[25] *See, e.g.*, *Eagle Crest Energy Co.*, 153 FERC ¶ 61,058 at P 67 (2015).

[26] *See generally Project Decommissioning at Relicensing: Policy Statement*, FERC Stats. & Regs., Regulations Preambles (1991–1996), ¶ 31,011 (1994); *see also City of Tacoma*, 110 FERC ¶ 61,140 (2005).

[27] *City of Tacoma*, 110 FERC ¶ 61,140 at P 12.

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For these reasons, Commission staff appropriately excluded Project decommissioning from consideration in SD1, and there is no basis for staff to identify these issues for NEPA analysis in SD2.

Conclusion

SCE looks forward to continuing to work with the Commission, USFS, other resource agencies and interested parties on the relicensing of the Project. SCE recognizes USFS's request for the Commission to "convene a technical conference prior to a Study Plan Determination" to address what it describes as "unique questions and considerations" raised by the Project's location within AAW.[28] While SCE welcomes the opportunity to engage with the Commission, USFS, and other interested parties, no such technical conference is needed to resolve this issue. As explained herein, the Commission's jurisdiction to relicensing this Project is well-established under the Wilderness Act and governing precedent.

Should there be any questions or concerns regarding this filing, please contact Matthew Woodhall, Rush Creek Relicensing Project Manager, by phone at (909) 362-1764 or via email at matthew.woodhall@sce.com.

Sincerely,

DocuSigned by:
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[28] USFS Comments at 1.

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