

Lee Vining Hydroelectric Project

FERC No. 1388

Welcome!

Using the chat, please write your name, organization, and a new habit or hobby from Social Distancing that you will continue doing

Aquatic Resources

Technical Working Group Meeting

May 24, 2021

Safety Moment



Meeting Objectives

- Develop a shared understanding of the hydrology and operations of the Project
- Refine hydro-optimization study plan scope and objectives
- Review SCE's study plan outlines for PAD
- Identify any outstanding areas of concern with proposed study plans

Agenda

- Welcome & Introductions
 - Safety Moment
 - Review of March TWG notes
 - Meeting goals
- Hydrology and Operations Discussion
- Discussion of Study Plans
- Schedule, Next Steps, Action Items
 - Next TWG date(s), TBD as needed
 - Other action items
- Final Questions

Lee Vining Relicensing TWG Team

SCE Team

Matthew Woodhall
Project Manager

Martin Ostendorf
Senior Manager

Seth Carr
Operations Manager

Lyle Laven
Production Manager

Consultant Team

Finlay Anderson
Project Manager

Shannon Luoma
Deputy PM

Kelly Larimer
Project Director

Carissa Shoemaker
TWG Coordinator

Michael Harty
Facilitator

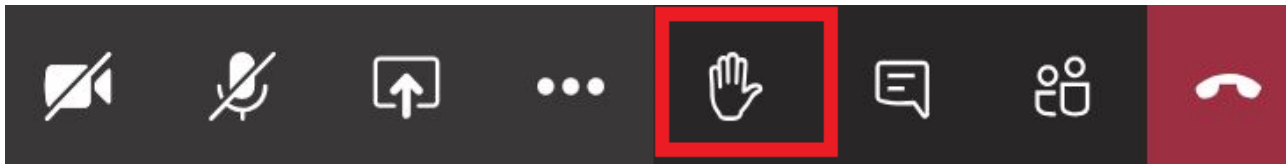
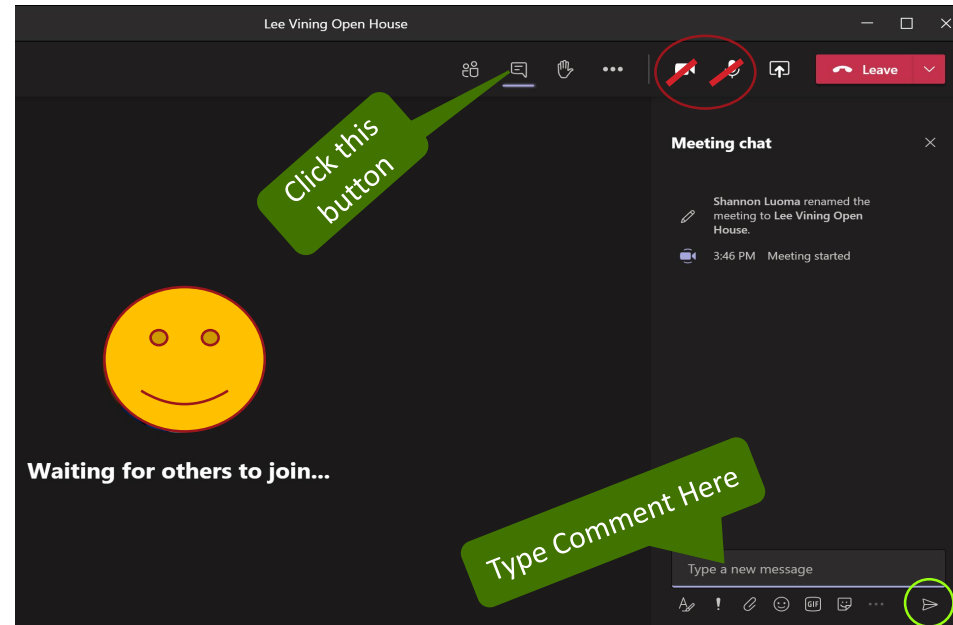
Terra Alpaugh
Facilitator

Lindsay Tryba
Facilitation Assistant

Heather Bowen Neff
Fish and Aquatics
TWG Lead

Meeting Tips and Guidelines

- Please wait to be called on and then unmute your line
 - Introduce yourself (name and affiliation) prior to speaking
- Listen and respect each other
- Stay on topic
- Ask a question by typing it into the chat box during the presentation or by using the raise your hand feature



Review of March TWG

- Reviewed study titles for inclusion in the Study Plan:
 - Aquatic Habitat Assessment and Sediment Characterization
 - Operations Model
 - Stream Fish Populations
 - Reservoir Fish Populations
 - Aquatic Invasive Plants and Algae
 - Water Quality Assessment
- Discussed studies requests that could likely be fulfilled with existing information:
 - Benthic Macroinvertebrate Study
- Discussed new study requests:
 - Hydropeaking
 - Information-Sharing

Review of March TWG action items

- Relicensing Team will:
 - Update study plans based on feedback provide at meeting.
 - Circulate Benthic Macroinvertebrate data and Adam Cohen's study.
 - Share their conclusions about the lack of nexus between the Project and water quality near dispersed camping sites with the Recreation TWG.
 - Schedule a meeting focused on hydro data and operations in about a month (late April, early May) and a May 24 full TWG meeting.
[COMBINED THESE TWO MEETINGS IN A LONGER MEETING TODAY]

Hydrology and Operations

Hydrology and Operations

- Short-term Increases and decreases in Lee Vining Creek have historically been a result of grid-related events, plant-trips or other short-term outages
- Since approximately 2016, SCE has been operating Poole Powerhouse to respond to load demands, as requested by power markets (CPUC); factors impacting demand include
 - Grid related events
 - Fires and fire prevention
 - Heat waves that increase load demand
 - Turn-down of solar and other renewables across the state
- These events are in compliance with FERC license and release schedules developed in consultation as required by the license and Sales Agreement

Data Review of Resource-Optimization Releases

- SCE's gage data below Poole Powerhouse records daily averages and does not provide resolution of intra-day releases
- LADWP data is available but has some limits
 - 5 miles downstream and incorporates flows from unregulated tributaries (e.g. Warren Fork)
 - Data is not reviewed and operated to USGS standards
 - 10 years of data are available for analysis

Data Review

- Goal: characterize the frequency and magnitude of short-term resource optimization events as measured at LADWP diversion
- Analytical Approach: Rolling mean and standard deviation for previous 8 hours is estimated
 - Events greater 48 hours assumed to be larger event (e.g. precipitation or change in operations)
 - Any point more than 4 standard deviations above rolling mean is considered to be “event”, otherwise its “base flow”

Summary

- Stakeholders have requested a study to look at potential impacts of this type of operation on resources downstream of the Powerhouse
 - Fish Habitat and Populations
 - BMI
 - Habitat assessment for selected bird species
- Given that this is a relatively new mode of operation, there is a nexus between project operations and resources questions
- Most questions should be able to be addressed by slight expansions of existing studies and integrating those studies into a framework for looking at relationship between flows and resources
- May require some installation of equipment to understand stage-discharge relationships in key areas.
- Area of study would be above LADWP diversion

Next Steps

- Develop Study Plan Outline and Objectives to same level of detail as others for inclusion in PAD
 - Data gathering likely to be largely incorporated within existing (proposed) studies
 - Review literature for comparable streams with similar operations
 - Identify if there is existing data-sources we have not already identified that may fill-in gaps.
- Study Plan will also include SCE responses to goals/objectives suggested in request.

Study Plans

Potential Studies for Other Resource Areas

- Terrestrial and Botanical
 - General Wildlife and Rare, Threatened, and Endangered (RTE) Species
 - Botanical (RTE, invasive, and riparian)
- Cultural and Tribal
 - Cultural study
 - Tribal study

Potential Studies for Other Resource Areas (continued)

- Recreation and Land Use
 - Recreation Use and Needs Evaluation
 - Existing Recreation Facilities Condition Assessment
 - Project Boundary, Lands, and Roads
 - Visual Quality Assessment

Aquatic Resources: Potential Studies

Requested by Stakeholders

- Instream flow needs assessment (Habitat Assessment and Sediment Characterization study)
- Peak flow study (partially addressed by operations model)
- Fish distribution baseline study (creek) (Stream Fish Populations study)
- Fish distribution baseline study (reservoirs) (Reservoir Fish Populations study)
- Sediment and geomorphology (Habitat Assessment and Sediment Characterization study)
- *Didymo* and other aquatic invasive species (Aquatic Invasive Plants and Algae study)
- Water quality assessment (Water Quality study)
- Benthic Macroinvertebrate Study (existing information provided)
- **Hydropower Resource Optimization (new since last TWG)**
- **Information sharing constraints (new since last TWG)**

Elements Considered but Not Included

Request	Rationale for not including
Peak Flow Study to restore conditions downstream of LADWP diversion dam	<u>Lack of Nexus:</u> No clear nexus for Project operations downstream of LADWP diversion dam. However, Operations Model and the hydrology data set to support it will generally have the information needed for MLC to compare with its Synthesis Report
Water quality assessment at Hwy 120 road pull-outs and dispersed camping areas near Project reservoirs	<u>Lack of Nexus:</u> Hwy 120 is a California State Highway maintained by Caltrans; there is no nexus to Project operations or maintenance. Dispersed camping is not related to or affected by Project operations or maintenance.

Aquatic Resources: Proposed Studies

Reservoir Fish Populations

- Nexus
 - Project operations have the potential to affect environmental conditions within Project reservoirs, including water quality and water surface elevations.
- Goals
 - Obtain information on reservoir fish populations where data are lacking.
- Objectives
 - Assess fish species composition, relative abundance, and age-distribution within Project reservoirs



Aquatic Resources: Proposed Studies

Stream Fish Populations

- Nexus
 - Project operations have the potential to affect fisheries within Project streams.
- Goals
 - Supplement existing information available downstream of Saddle Bag
 - Obtain information on existing fish populations downstream of Project reservoirs.
- Objectives
 - Assess species composition, density, and age-distribution of the existing trout communities.



Aquatic Resources: Proposed Studies

Aquatic Habitat Assessment and Sediment Characterization

- Nexus
 - Project operations have the potential to affect environmental conditions (e.g., substrate, cover, water depth and velocity) within Project-affected stream reaches.
- Goals
 - Determine habitat conditions for fisheries within Project streams, and characterize baseline condition of channel substrate (e.g., fines and coarse sediments).
- Objectives
 - Characterizing habitat types, spawnable gravel patches (i.e., coarse sediment), and determining potential habitat-related limiting factors for the trout population.



Aquatic Resources: Proposed Studies

Aquatic Invasive Plants and Algae

- Nexus
 - Project operations could affect the extent of invasive aquatic plants and algae including *Didymo* in reaches downstream of Project reservoirs.
- Goal
 - Determine the extent and distribution of invasive aquatic plants and algae, with a particular focus on *Didymo*, in stream reaches downstream of Project reservoirs.
- Objectives
 - Obtain a semi-quantitative estimate of spatial extent and percent cover of *Didymo* and other invasive aquatic plant species



Aquatic Resources: Proposed Studies

Stream and Reservoir Water Quality

- Nexus
 - Project operations may affect water quality in Project reservoirs and stream reaches.
- Goals
 - Assess consistency of Project reservoirs and Project-affected stream reaches with Basin Plan objectives.
- Objectives
 - Evaluate parameters obtained from reservoir profiles and *in situ* measurements.



Aquatic Resources: Proposed Studies

Hydro Operations Model

- Objectives

- Develop a robust Operations Model (Model) to assist SCE and stakeholders in understanding how Project operations interact with Lee Vining hydrology. This model would be used to make informed decisions regarding the implementation of other relicensing studies.
 - Accurately model the systems inflows, outflows, and generation nodes.
 - Align model with needs of other relicensing studies and information needs
 - Develop procedures to configure model for alternative operational scenarios and document results.
- Determine effective operating limits the Pool Powerhouse to accurately represent installed and dependable capacity for licensing documents.

Status and Clarification of Outstanding Study Requests

- Information Sharing
 - SCE Continues to view information sharing as more of a potential PME measure

RELICENSING SCHEDULE OVERVIEW

Relicensing Process Schedule

(subject to change depending on relicensing process)

Date	Activity
August 2, 2021	SCE Files Notice of Intent/Pre-Application Document (NOI/PAD)
September 2021	FERC initiates Tribal consultation
September – October 2021	<i>If ILP:</i> FERC issues Notice of Commencement and Scoping Document 1 (SD1) and hosts scoping meeting/site visit <i>If TLP:</i> FERC approves use of TLP
October 2021	Public Meeting to discuss PAD and NOI
October/November 2021	Stakeholders file comments on NOI/PAD and request studies
November 13, 2021	SCE files proposed Study Plans
January 2022	SCE hosts Study Plan Meeting
April 2022	Revise Study Plans as appropriate
Spring/Summer 2022-2023	Conduct field studies
September 3, 2024	SCE Files Draft License Application
January 31, 2025	SCE Files Final License Application

How to Stay Involved

- Check the Project website for updates/news at www.sce.com/leevining
- You can view other SCE relicensing Projects at www.sce.com/regulatory/hydro-licensing
- Sign-up to receive Project-related emails through the Contact Registration Form/Project Questionnaire on the Project website
- Participate in an ongoing TWG
- Sign up for FERC's for e-subscription (docket number "P-1388") at www.ferc.gov
- Email Carissa Shoemaker with questions carissa.shoemaker@erm.com



Thank you!