

SOUTHERN CALIFORNIA EDISON
Lee Vining Project
(FERC Project No. 1388)

VOLUME II



PRELIMINARY APPLICATION DOCUMENT



August 2021

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SOUTHERN CALIFORNIA EDISON

Lee Vining Project (FERC Project No. 1388)

Preliminary Application Document

Southern California Edison
1515 Walnut Grove Ave
Rosemead, CA 91770

August 2021

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
°F	degree Fahrenheit
AAA	Aquatic Assessment Area
ABL	Aquatic Bioassessment Lab
AF	acre-foot
AGOL	ArcGIS Online
AICMC	American Indian Council of Mariposa County
amsl	above mean sea level
APE	Area of Potential Effects
APP	Avian Protection Plan
AVM	acoustic velocity meter
Basin Plan	Lahontan Region Water Quality Control Plan
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMI	benthic macroinvertebrate
BMP	best management practice
BP	Before Present
cal	calendar years
Cal-IPC	California Invasive Plant Council
CAL FIRE	California Department of Forestry and Fire Protection
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CDFW	California Department of Fish and Wildlife
CEII	Critical Energy Infrastructure Information
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
COLD	cold freshwater fish

COVID-19	Coronavirus-2019
CRPR	California Rare Plant Rank
CSCI	California Stream Condition Index
DO	dissolved oxygen
DWR	California Department of Water Resources
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
fps	foot per second
g/m ²	gram per meter square
GAA	Geomorphic Assessment Area
GIS	geographic information system
HAPP	Historic and Archaeological Preservation Plan
HUC	Hydraulic Unit Code
ILP	Integrated Licensing Process
IPaC	Information for Planning and Consultation
JAM	Joint Agency Meeting
ka	thousand years ago
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
LRWQCB	Lahontan Region Water Quality Control Board
LWCF	Land and Water Conservation Fund
m ²	square meter
mg/L	milligrams per liter
MRLC	Multi-Resolution Land Characteristics
MRZ	Mineral Resource Zone
MUN	municipal and domestic water supply
MW	megawatt
MWh	megawatt-hour
mya	million years ago
NAHC	Native American Heritage Commission
NGO	non-governmental organization
NH ₃	ammonia

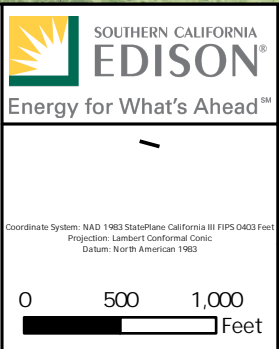
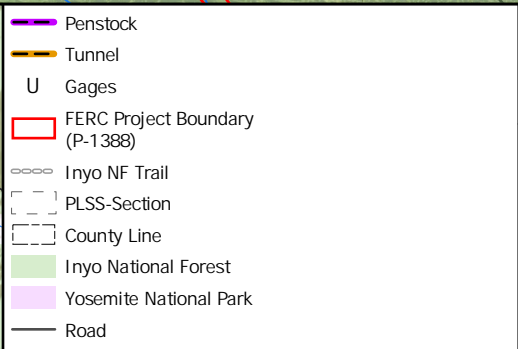
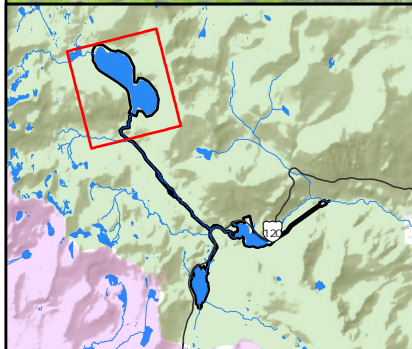
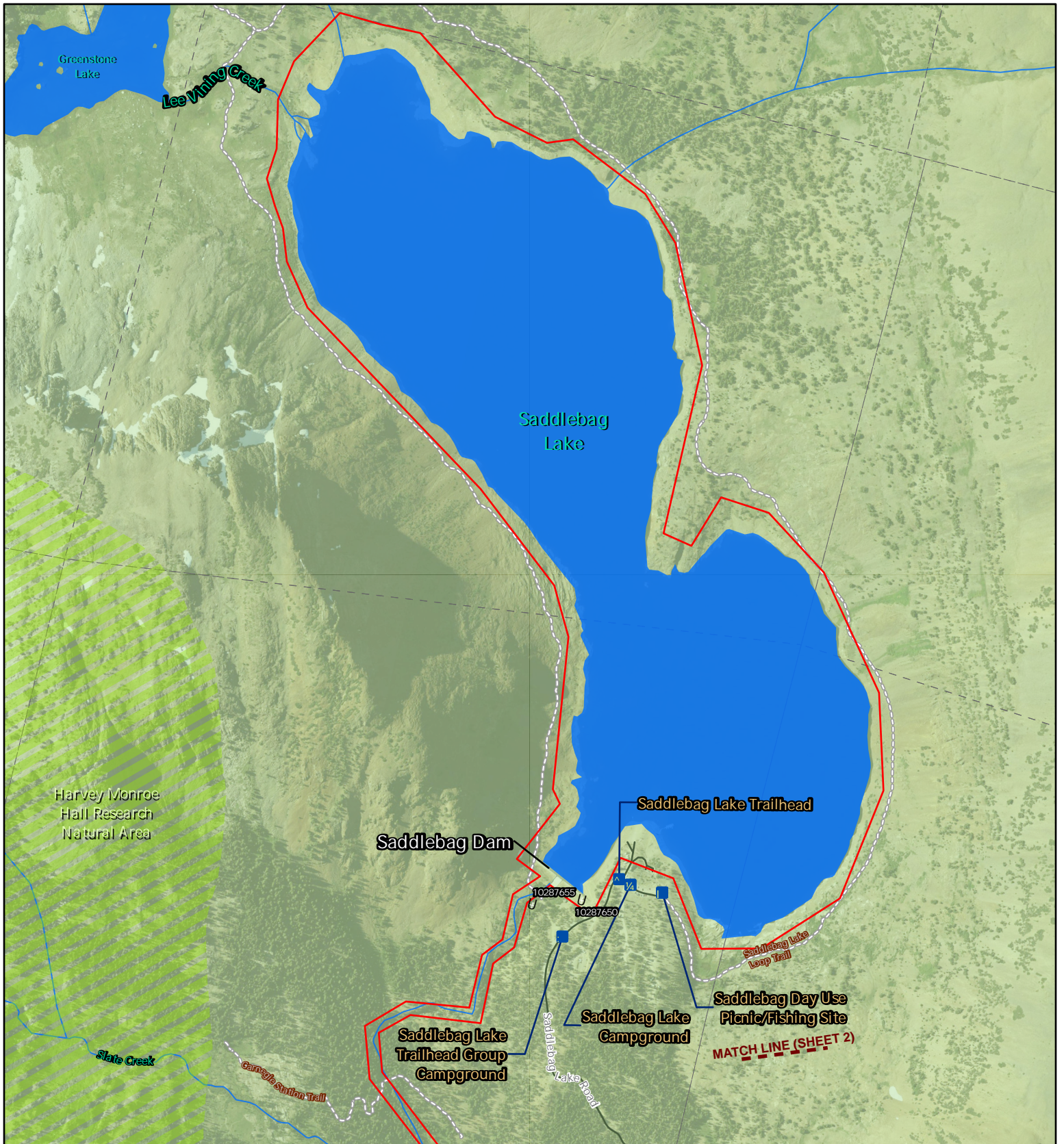
NH ₄	ammonium
NLCD	National Land Cover Database
NNIP	Non-Native Invasive Plant
NO ₃	nitrate
NOI	Notice of Intent
NRHP	National Register of Historic Places
NRM	Natural Resource Manager
NTR	National Toxics Rule
NVUM	National Visitor Use Monitoring Program
NWI	National Wetlands Inventory
O&M	operations and maintenance
OHP	California Office of Historic Preservation
PAD	Preliminary Application Document
PCT	Pacific Crest Trail
pH	indicates acidity or alkalinity of a solution
PO ₄	orthophosphate
ppt	parts per thousand
Project	Lee Vining Hydroelectric Project (FERC Project No. 1388)
RCA	Riparian Conservation Area
RTE	rare, threatened, and endangered
SAT	seven affiliated Tribes
SCC	Species of Conservation Concern
SCE	Southern California Edison Company
SCT	Candidate for listing as California Threatened
SHPO	State Historic Preservation Office
SNARL	Sierra Nevada Aquatic Research Laboratory
SPAWN	spawning, reproduction and/or early development
SSC	Species of Special Concern
Study Plan	Technical Study Plan
SWAMP	Surface Water Ambient Monitoring Program
SWRCM	State Water Resources Control Board
TAA	Terrestrial Assessment Area
TCP	Traditional Cultural Property

THPO	Tribal Historic Preservation Officer
TLP	Traditional Licensing Process
TWG	Technical Working Group
U.S.	United States
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
YOY	young-of-year

APPENDIX A
EXHIBIT G MAP OF THE PROJECT

Map Sheets 1 through 4

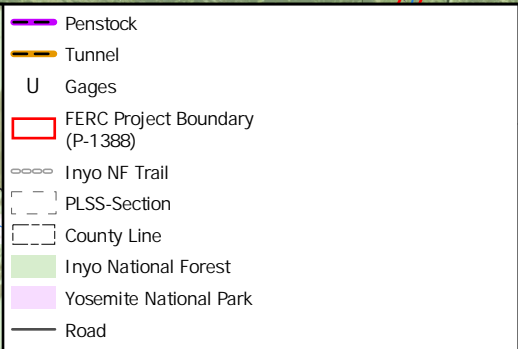
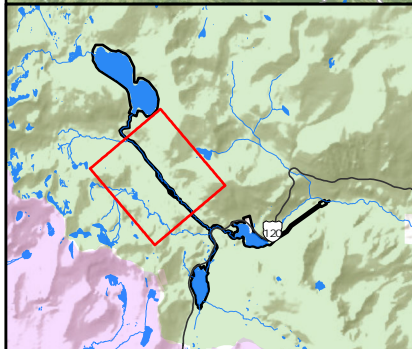
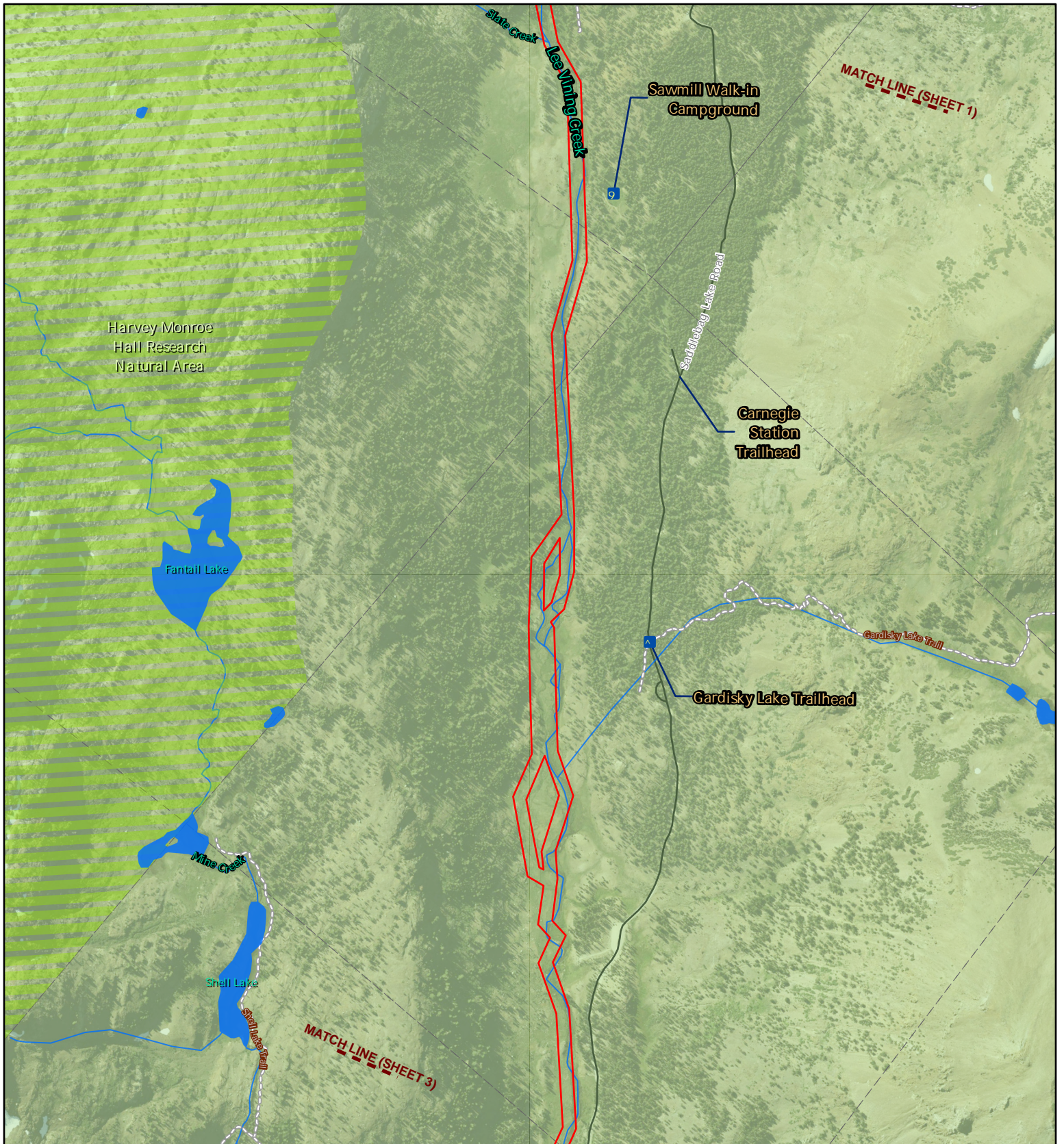
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Project Maps


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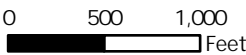




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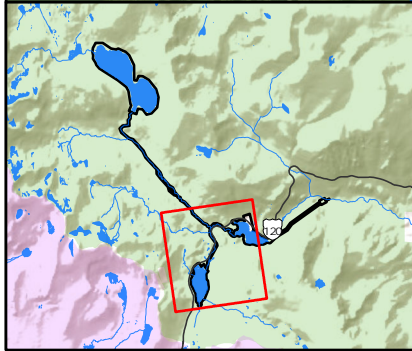
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Project Maps

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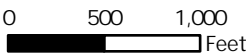


-  Penstock
-  Tunnel
-  Gages
-  FERC Project Boundary (P-1388)
-  Inyo NF Trail
-  PLSS-Section
-  County Line
-  Inyo National Forest
-  Yosemite National Park
-  Road



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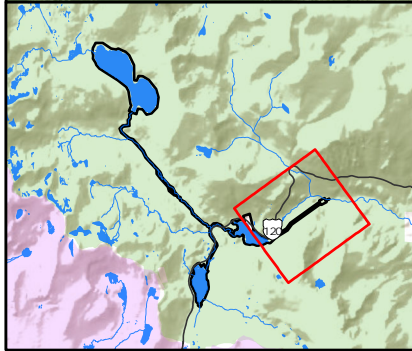
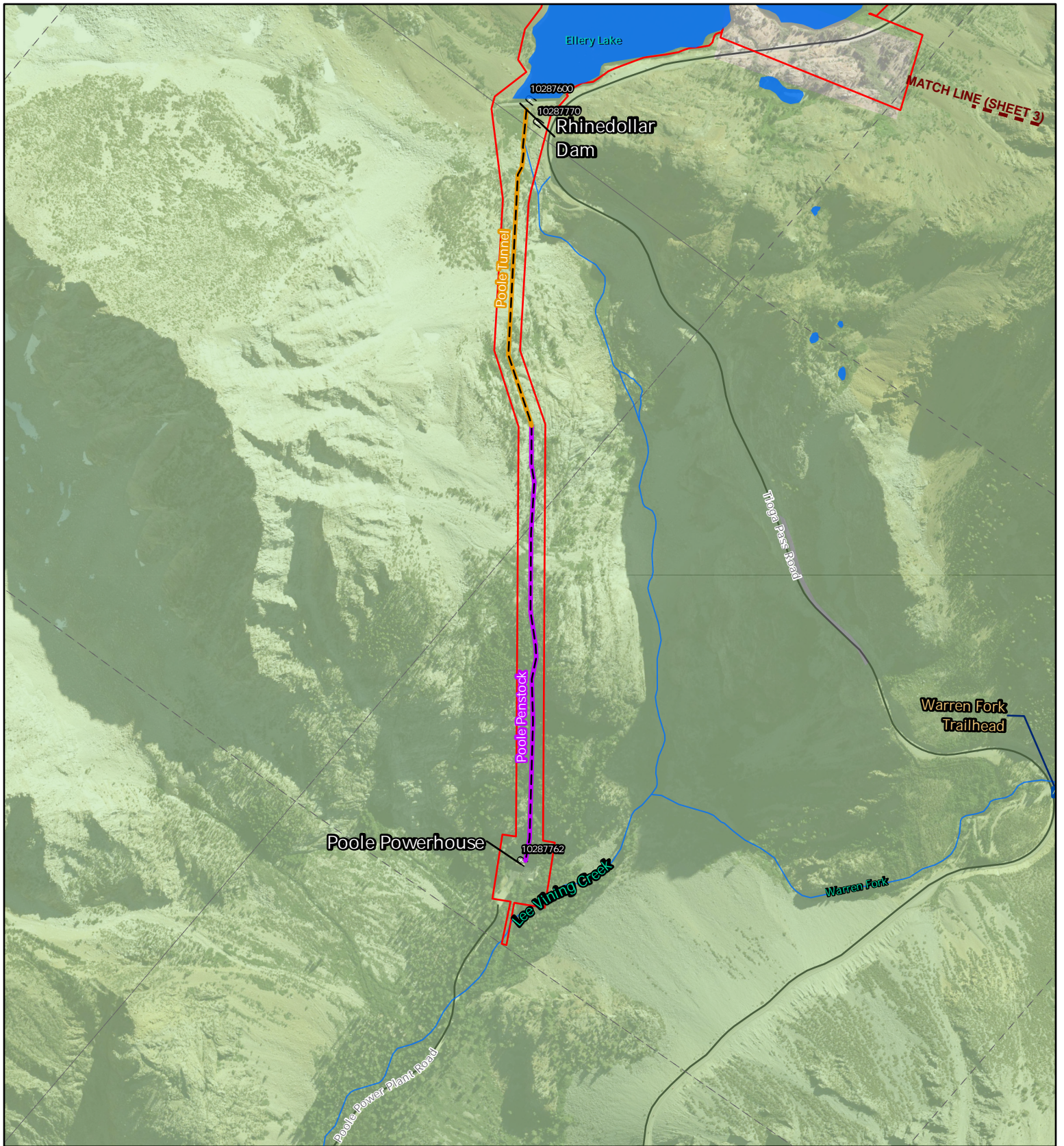


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**LEE VINING
HYDROELECTRIC PROJECT
FERC PROJECT NO. 1388**



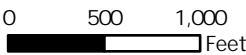
- Penstock
- Tunnel
- U Gages
- FERC Project Boundary (P-1388)
- Inyo NF Trail
- PLSS-Section
- County Line
- Inyo National Forest
- Yosemite National Park
- Road



**SOUTHERN CALIFORNIA
EDISON**[®]
Energy for What's AheadSM



Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983



0 500 1,000
Feet

Project
Maps

Sheet 4 of 4

LEE VINING
 HYDROELECTRIC PROJECT
 FERC PROJECT NO. 1388

**APPENDIX B
CONSULTATION RECORD**

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This consultation record for the Lee Vining Hydroelectric Project (Project) includes the following information:

1. Consultation Matrix: Showing Technical Working Group (TWG) meetings held to date and attendees at each meeting.
2. Online Questionnaire: A copy of the blank questionnaire available on the public relicensing website for interested parties to submit with Project or process-related questions or to request to be added to the distribution list.
3. Questionnaire Responses: Records of each form submitted to the Relicensing Team received via the Contact Us link on the public website.
4. TWG Meeting Summaries: A concise synopsis of each TWG meeting to date, attendees, and outcomes. Note that follow-up communications related to action items are not included here, but can be provided upon request.
5. Study Requests from Stakeholders: A record of each formal study request form submitted to the Relicensing Team during the study plan development process.

Additional information pertaining to the TWG meetings, such as agendas, meeting PowerPoint presentations, and meeting summaries, are all available on the public website: <https://www.sce.com/regulatory/hydro-licensing/leevining>.

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Meeting Attendance of Stakeholders

Name	Affiliation	Questionnaire Received	Early Engagement Meetings								Technical Working Groups																
			CDFW 5/5/2020	USFS 5/5/2020	LADWP 5/5/2020	Mono Lake Committee 5/6/2020	NPS 5/12/2020	USFWS 5/6/2020	Water Control Boards 5/6/2020	Public Open Houses 10/6/2020	All Resources Kickoff 11/17/2020	Aquatic 1/25/2021	Aquatic 2/22/2021	Aquatic 3/29/2021	Aquatic 5/24/2021	Terrestrial/Botanical 1/27/2021	Terrestrial/Botanical 2/24/2021	Terrestrial/Botanical 4/7/2021	Terrestrial/Botanical 5/26/2021	Cultural/Tribal 1/27/2021	Cultural/Tribal 2/24/21	Cultural/Tribal 3/31/21	Cultural/Tribal 5/26/21	Recreation/Land Use 1/28/2021	Recreation/Land Use 2/25/2021	Recreation/Land Use 4/1/2021	Recreation/Land Use 5/27/2021
Adam Cohen	SWS									X	X	X	X														
Adam Barnett	USFS																						X	X	X	X	
Adam Perez	LADWP				X																						
Alan Partridge	SCE									X		X	X														
Allison Rudalevige	Psomas									X				X	X	X	X										
Alyssa Marquez	CDFW	X	X						X	X	X	X	X	X	X	X	X										
AR	Unknown								X																		
Ashley Blythe-Haverstock	USFS									X								X	X								
Audry Williams	SCE								X									X	X	X	X						
Bartshe Miller	Mono Lake Committee				X				X	X				X	X							X	X	X	X		
Bill Tucker	Southern Sierra Miwuk Nation																			X							
Blake Engelhardt	USFS								X	X				X	X	X	X										
Brad Blood	Psomas		X	X	X	X			X	X				X	X	X	X										
Brandy Wood	CDFW		X							X																	
Brian Adkins	Bishop Paiute Tribe									X																	
Bryan Hatchell	Friends of the Inyo	X																									
Carissa Shoemaker	ERM		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Chad Mellison	USFWS								X	X	X	X	X	X		X											
Charlotte Lange	Mono Lake Kutzadikaa Tribe									X									X								
Chase Hildeburn	State Water Resource Control Board								X	X	X																
Chris Lizza	Mono Basin Regional Planning Advisory Committee								X																		
Chris Shutes	California Sportfishing Protection Alliance								X	X	X	X	X														
Christina McDonald	North Fork Rancheria of Mono Indians of California	X												X				X	X			X					
Claire Landowski	Mono Lake Committee	X							X	X	X	X															
Dan Yarborough	USFS								X	X																	
Danelle Gutierrez	Big Pine Paiute Tribe of the Owens Valley	X																									
David Hughes	Psomas																	X									
David Moore	SCE													X													
Dean Tonenna	Mono Lake Kutzadikaa Tribe									X								X									
Dennis Domaille	Unknown								X																		
Diana Pietrasanta	USFS			X					X	X																	

Meeting Attendance of Stakeholders

Name	Affiliation	Questionnaire Received	Early Engagement Meetings								Technical Working Groups																
			CDFW 5/5/2020	USFS 5/5/2020	LADWP 5/5/2020	Mono Lake Committee 5/6/2020	NPS 5/12/2020	USFWS 5/6/2020	Water Control Boards 5/6/2020	Public Open Houses 10/6/2020	All Resources Kickoff 11/17/2020	Aquatic 1/25/2021	Aquatic 2/22/2021	Aquatic 3/29/2021	Aquatic 5/24/2021	Terrestrial/Botanical 1/27/2021	Terrestrial/Botanical 2/24/2021	Terrestrial/Botanical 4/7/2021	Terrestrial/Botanical 5/26/2021	Cultural/Tribal 1/27/2021	Cultural/Tribal 2/24/21	Cultural/Tribal 3/31/21	Cultural/Tribal 5/26/21	Recreation/Land Use 1/28/2021	Recreation/Land Use 2/25/2021	Recreation/Land Use 4/1/2021	Recreation/Land Use 5/27/2021
Duncan King	Mono Basin Regional Planning Advisory Committee	X							X																		
Ed Hancock	Lahontan Regional Water Quality Control Board								X																		
Edith Read	Edith Read Associates									X					X	X	X	X									
Eric Tillemans	LADWP				X																						
Finlay Anderson	Kleinschmidt		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Gaye Mueller	Mono County Fish and Wildlife Commission	X							X																		
Geoffrey McQuilkin	Mono Lake Committee					X				X																	
Gordon Martin	USFS			X					X	X																	
Greg Reis	Mono Lake Committee	X								X	X	X	X														
Heather Beeler	USFWS								X	X																	
Heather Bowen Neff	Stillwater Sciences								X	X	X	X	X														
Jason Small	Mono Lake Committee									X																	
James Erdman	CDFW																X	X	X								
Jennifer Watts	Lahontan Regional Water Quality Control Board							X																			
Jillian Roach	ERM										X																
Jora Fogg	Friends of the Inyo	X																									
Justin Barrett	USFWS									X																	
Karen Klosowski	Kleinschmidt																										X
Katie Gallagher	Psomas								X																		
Katie Goodwin	Access Fund	X																					X	X			
Kelly Larimer	Kleinschmidt		X	X	X	X	X	X	X	X	X	X	X		X	X			X	X	X		X	X	X	X	X
Lawson Reif	USFS								X	X													X				
Lindsey Steinwachs	USFS								X																		
Lyle Laven	SCE									X	X	X															
Lynn Compas	HRA									X									X	X	X	X					
Maria Jesus	California Native Plant Society	X																									
Mark Sebarrotin	Kerns & West											X															
Martin Ostendorf	SCE								X	X			X											X	X	X	X
Mary Margaret Richardson	Unknown								X																		
Matthew Harper	Kleinschmidt						X			X													X	X	X	X	X
Matthew Woodhall	SCE		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Mike Harty	Kearns & West										X	X	X														

Meeting Attendance of Stakeholders

Name	Affiliation	Questionnaire Received	Early Engagement Meetings									Technical Working Groups															
			CDFW 5/5/2020	USFS 5/5/2020	LADWP 5/5/2020	Mono Lake Committee 5/6/2020	NPS 5/12/2020	USFWS 5/6/2020	Water Control Boards 5/6/2020	Public Open Houses 10/6/2020	All Resources Kickoff 11/17/2020	Aquatic 1/25/2021	Aquatic 2/22/2021	Aquatic 3/29/2021	Aquatic 5/24/2021	Terrestrial/Botanical 1/27/2021	Terrestrial/Botanical 2/24/2021	Terrestrial/Botanical 4/7/2021	Terrestrial/Botanical 5/26/2021	Cultural/Tribal 1/27/2021	Cultural/Tribal 2/24/21	Cultural/Tribal 3/31/21	Cultural/Tribal 5/26/21	Recreation/Land Use 1/28/2021	Recreation/Land Use 2/25/2021	Recreation/Land Use 4/1/2021	Recreation/Land Use 5/27/2021
Monique Sanchez	USFS										X	X	X		X	X			X	X	X			X	X	X	
Monty Bengochia	Bishop Paiute Tribe																			X	X	X					
Naomi Jensen	TEAM Engineering & Management, Inc.	X																									
Nathan Sill	USFS			X					X	X	X	X	X		X		X										
Nicholas Von Gersdorff	SCE								X																		
Nick Buckmaster	CDFW									X	X	X											X	X		X	
Nora Gamino	USFS									X													X				
Nuria Holmes	Kleinschmidt								X																		
Patricia Moyer	CDFW	X	X																								
Paul McFarland	Citizen (former Friends of the Inyo Director)	X							X																		
Paul Pau	LADWP				X				X	X		X	X														
Raymond Andrews	Mono Lake Kutzadikaa Indian Community Cultural Preservation Association																				X				X		
Robert Di Paolo	Mono Lake Committee					X				X																	
Ron Goode	North Fork Mono Tribe											X								X		X	X				
Rose Banks	CDFW								X																		
Saeed Jorat	LADWP				X				X	X																	
Samantha Nelson	SCE								X																		
Sean Scruggs	Fort Independence Indian Community of Paiute Indians																			X							
Seth Carr	SCE									X	X	X	X														
Shannon Luoma	Kleinschmidt		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Shawna Theisen	USFWS							X																			
Sheila Irons	USFS			X					X	X												X	X	X	X	X	
Shelly Davis-King	Davis-King Associates																		X	X	X	X					
Stephen Bowes	NPS	X					X		X	X													X	X	X	X	
Steve Norton	Psomas								X	X					X	X	X	X									
Steve Parmenter	CDFW	X							X																		
Sue Burak	Snow Survey Associates	X							X	X		X															
Tara Fouch-Moore	Southern Sierra Miwuk Nation																				X						
Terra Alpaugh	Kearns & West										X	X	X														
Thomas Torres	USFS								X	X		X		X	X		X										
Todd Ellsworth	USFS										X	X				X											
Tristan Leong	USFS								X	X	X																

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Lee Vining Hydroelectric Project

Contact Registration and Areas of Interest Form

Name

First Last

Title (if applicable)

Agency / Organization (if applicable)

Email

Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

Phone Number (Office)

 - -

####

Phone Number (Alternate)

 - -

####

I am interested in the following resource areas

- Aesthetic Resources
- Rare, Threatened & Endangered Species
- Botanical and Wildlife Resources
- Recreation Resources
- Cultural Resources
- Riparian and Wetland Habitats
- Fish and Aquatic Resources
- Socio-economic Resources
- Geology and Soils

- Tribal Resources
- Geomorphology
- Water Quality
- Land Use
- Water Use/Water Supply
- Power Generation
- Other Resource Information

Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas.

- Yes No

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)?

- Yes No

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)

- Yes No

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact

information below:

Yes

No

Name

First Last

Email

Name

First Last

Email

Thank you for your time. Please provide any additional comments and/or questions regarding the Lee Vining Hydroelectric Project, Pre-Application Document, or relicensing.

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From: Wufoo <no-reply@wufoo.com>
Sent on: Friday, June 12, 2020 6:26:36 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#4]

Follow up: Follow up
Follow up status: Completed
Completed on: Monday, June 22, 2020 5:04:00 PM

Name Paul McFarland

Email pmcfarland395@gmail.com

Address  fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b0200000000050000000c0202000200030000
PO Box 183
Lee Vining, California 93541
United States

- I am interested in the following resource areas
- -Recreation and Land Management
 - -Cultural, Historical & Archeological
 - -Aquatic / Water Quality
 - -Terrestrial and Riparian

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From: Wufoo <no-reply@wufoo.com>
Sent on: Friday, June 19, 2020 10:47:35 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#5]

Follow up: Follow up
Follow up status: Completed
Completed on: Monday, June 22, 2020 3:44:00 PM

Table with contact information for Stephen Bowes, including Name, Agency (nps), Email (stewphen_bowes@nps.gov), Address (333 BUSH SAN FRANCISCO, California 94104), Phone Number ((510) 277-2166), and a list of resource areas (Recreation and Land Management).

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From: Wufoo <no-reply@wufoo.com>
Sent on: Saturday, June 20, 2020 12:24:59 AM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#6]


Follow up: Follow up
Start date: Monday, June 22, 2020 12:00:00 AM
Due date: Monday, June 22, 2020 12:00:00 AM

Name	Patricia Moyer
Agency / Organization (if applicable)	CDFW
Email	patricia.moyer@wildlife.ca.gov
I am interested in the following resource areas	<ul style="list-style-type: none"> · Recreation and Land Management · Cultural, Historical & Archeological · Aquatic / Water Quality · Terrestrial and Riparian · Other: Please comment below.

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From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, June 22, 2020 3:55:30 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#8]

Name	Alyssa Marquez
Title (if applicable)	Environmental Scientist
Agency / Organization (if applicable)	California Department of Fish and Wildlife
Email	Alyssa.Marquez@Wildlife.ca.gov
Address	 fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b0200000000050000000c0202000200030 787 N Main St Bishop, CA 93514 United States
Phone Number (Alternate)	(760) 567-0332
I am interested in the following resource areas	<ul style="list-style-type: none"> · Aquatic / Water Quality · Terrestrial and Riparian

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From: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Sent on: Monday, June 22, 2020 4:56:11 PM
To: Shelly DavisKing <shellydk@frontiernet.net>; Audry Williams <audry.williams@sce.com>
CC: Shannon Luoma <Shannon.Luoma@KleinschmidtGroup.com>
Subject: FW: Lee Vining Hydroelectric Project [#9]

Hi Shelly and Audry,

Just letting you know that a new person just requested to be added to the contact list for Lee Vining, Christina McDonald info below. I've added her to our contact list on SharePoint.

Thanks

Carissa Shoemaker
 Senior Project Scientist
My work hours M&Tu 8-6; off W; Th&F 12-5
ERM
M +1 907 575-0294

From: Wufoo <no-reply@wufoo.com>
Sent: Monday, June 22, 2020 9:10 AM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#9]

Name	Christina McDonald
Title (if applicable)	Environmental Director
Agency / Organization (if applicable)	North Fork Rancheria of Mono Indians of California
Email	cmcdonald@nfr-nsn.gov
Address	PO Box 929 33143 Rd 222 North Fork, CA 93643 United States
Phone Number (Office)	(559) 877-2461
Phone Number (Alternate)	(559) 760-2525
I am interested in the following resource areas	<ul style="list-style-type: none"> • Recreation and Land Management • Cultural, Historical & Archeological • Aquatic / Water Quality • Terrestrial and Riparian

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From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, June 22, 2020 4:10:24 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#9]

Name	Christina McDonald
Title (if applicable)	Environmental Director
Agency / Organization (if applicable)	North Fork Rancheria of Mono Indians of California
Email	cmcdonald@nfr-nsn.gov
Address	

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From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, June 22, 2020 4:48:19 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#10]


Name	Steve Parmenter
Title (if applicable)	Senior Environmental Scientist
Agency / Organization (if applicable)	California Department of Fish and Wildlife
Email	steve.parmenter@wildlife.ca.gov
Address	 fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b020000000050000000c0202000200030 787 North Main Street, Ste. 220 Bishop, CA 93514 United States
Phone Number (Office)	(760) 937-3924
I am interested in the following resource areas	<ul style="list-style-type: none"> • Aquatic / Water Quality

[fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b020000000050000000c0202000200030000](#)

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From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, June 22, 2020 9:45:26 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#11]

Follow up: Follow up
Start date: Monday, June 22, 2020 12:00:00 AM
Due date: Monday, June 22, 2020 12:00:00 AM

Name	Greg Reis
Title (if applicable)	Information and Restoration Specialist
Agency / Organization (if applicable)	Mono Lake Committee
Email	greg@monolake.org
Address	 fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b0200000000050000000c0202000200030000 PO Box 161 San Geronimo, CA 94963 United States
Phone Number (Office)	(760) 647-6386
Phone Number (Alternate)	(415) 342-6390
I am interested in the following resource areas	<ul style="list-style-type: none"> · Recreation and Land Management · Cultural, Historical & Archeological · Aquatic / Water Quality · Terrestrial and Riparian

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From: Wufoo <no-reply@wufoo.com>
Sent on: Thursday, July 2, 2020 8:11:27 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#12]

Name	Bryan Hatchell
Agency / Organization (if applicable)	Friends of the Inyo
Email	bryan.hatchell@colorado.edu
Address	 fillColor14286846fillOpacity16384fFilled101000900000321000000000050000000000400000003010800050000000b020000000050000000c02020002000 Bishop, CA 93514
Phone Number (Office)	(336) 307-6745
I am interested in the following resource areas	<ul style="list-style-type: none"> · Aesthetic Resources · Rare, Threatened & Endangered Species · Botanical and Wildlife Resources · Recreation Resources · Cultural Resources · Fish and Aquatic Resources · Geology and Soils · Tribal Resources
Based on the resource area(s) identified in Question 2, are you aware of data gaps or additional information needs?	No
Based on the resource area(s) identified in Question 2, are you aware of any additional studies or Comprehensive Management Plans that may be relevant to the project area and/or resource?	No
Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below:	No

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From: Wufoo <no-reply@wufoo.com>
Sent on: Friday, August 21, 2020 9:30:28 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#13]

Follow up: Follow up
Follow up status: Completed
Completed on: Monday, November 9, 2020 5:20:00 PM

Name: Sue Burak
Email: sb@snowhydroogy.com
Address: 1335 Rocking W Drive PMB 130, Bishop, CA 93514, United States

Phone Number (760) 935-4129 (Office)

- I am interested in the following resource areas:
- Riparian and Wetland Habitats
- Water Quality
- Water Use/Water Supply

Based on the resource area(s) identified in Question 2, are you aware of data gaps or additional information needs?

I am not able to access streamflow data. In order to evaluate potential impacts to LVC, access to historic and current stream discharge is needed. thank you, Sue

Based on the resource area(s) identified in Question 2, are you aware of any additional studies or Comprehensive Management Plans that may be relevant to the project area and/or resource?

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below:

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From: Wufoo <no-reply@wufoo.com>
Sent on: Wednesday, September 2, 2020 6:51:44 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#14]

Name	Alyssa Marquez
Title (if applicable)	Environmental Scientist
Agency / Organization (if applicable)	California Department of Fish and Wildlife
Email	Alyssa.Marquez@Wildlife.ca.gov
Address	 fillColor14286846fillOpacity16384filled101000900000321000000000050000000000400000003010800050000000b020000000050000000c02020002000 787 North Main Street, Suite 220 Bishop, CA 93514 United States
Phone Number (Office)	(760) 873-7452
Phone Number (Alternate)	(760) 567-0332
I am interested in the following resource areas	<ul style="list-style-type: none"> · Rare, Threatened & Endangered Species · Botanical and Wildlife Resources · Riparian and Wetland Habitats · Fish and Aquatic Resources · Geology and Soils · Geomorphology · Water Quality · Water Use/Water Supply
Based on the resource area(s) identified in Question 2, are you aware of data gaps or additional information needs?	No
Based on the resource area(s) identified in Question 2, are you aware of any additional studies or Comprehensive Management Plans that may be relevant to the project area and/or resource?	No
Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please	No

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From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, October 5, 2020 9:23:41 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#15]

Name: Gaye Mueller
Agency / Organization: Mono County Fish & Wildlife Commission
Email: easternsierraartist@gmail.com
Address: 315A East Pine St. BISHOP, CA 93514 United States
Phone Number: (760) 937-2942
I am interested in the following resource areas: Rare, Threatened & Endangered Species, Botanical and Wildlife Resources, Riparian and Wetland Habitats, Fish and Aquatic Resources, Geology and Soils, Water Quality, Water Use/Water Supply, Other Resource Information
Based on the resource area(s) identified in Question 2, are you aware of data gaps or additional information needs? Yes
Based on the resource area(s) identified in Question 2, are you aware of any additional studies or Comprehensive Management Plans that may be relevant to the project area and/or resource? Yes
Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below: Yes

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From: Wufoo <no-reply@wufoo.com>
Sent on: Tuesday, October 6, 2020 3:00:43 AM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#16]

Name Duncan King

Email nosmog@yahoo.com

Address PO Box 235 200 Peeler Lake Drive
Lee Vining, CA 93541
United States

Phone Number (760) 920-9741 (Office)

- I am interested in the following resource areas: Botanical and Wildlife Resources, Recreation Resources, Riparian and Wetland Habitats, Fish and Aquatic Resources, Geomorphology, Water Quality, Water Use/Water Supply, Power Generation

Based on the resource area(s) identified in Question 2, are you aware of data gaps or additional information needs? No

Based on the resource area(s) identified in Question 2, are you aware of any additional studies or Comprehensive Management Plans that may be relevant to the project area and/or resource? No

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below: No

fillColor14286846fillOpacity16384fFilled10100090000032100000000005000000000040000003010800050000000b020000000050000000c0202000200030000

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From: Wufoo <no-reply@wufoo.com>
Sent on: Wednesday, October 7, 2020 3:33:35 AM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#17]

Follow up: Follow up
Follow up status: Completed
Completed on: Wednesday, October 7, 2020 3:41:00 PM

Name: Sue Burak
Email: sb@snowhydrology.com
Address: 1335 Rocking W Drive PMB 130, Bishop, CA 93514, United States

Phone Number (Office): (760) 935-4129

Phone Number (Alternate): (760) 709-1843

- I am interested in the following resource areas:
- Fish and Aquatic Resources
- Water Quality
- Water Use/Water Supply

Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas. Yes

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? Yes

Didymosphenia geminata has been found in Lee Vining Creek below the Saddlebag Dam (Rost and Fritzen, 2014). Slate Creek did not have any D. geminatae. Altere often significant effect on benthic habitats.

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? Yes

Microsoft Exchange Server;converted from html;

From: Wufoo <no-reply@wufoo.com>
Sent on: Thursday, October 22, 2020 6:08:18 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#18]

Follow up: Follow up
Follow up status: Completed
Completed on: Monday, October 26, 2020 5:15:00 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name: Jora Fogg
Title (if applicable): Policy Director
Agency / Organization (if applicable): Friends of the Inyo
Email: jora@friendsoftheinyo.org
Address: 621 W Line St. Ste 201, Bishop, California 93514, United States
Phone Number (Office): (760) 873-6500
Phone Number (Alternate): (360) 259-4275
I am interested in the following resource areas: Botanical and Wildlife Resources, Recreation Resources, Cultural Resources
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas: Yes
Recreation and National Forest interests
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? No

Microsoft Exchange Server;converted from html;

From: Wufoo <no-reply@wufoo.com>
Sent on: Monday, November 16, 2020 6:47:17 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#19]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name: Claire Landowski
Agency / Organization: Mono Lake Committee
Email: claire@monolake.org
Address: 51365 Hwy 395 & 3rd St. Lee Vining, California 93541 United States
Phone Number: (760) 647-6595
I am interested in the following resource areas: Aesthetic Resources, Recreation Resources, Cultural Resources, Riparian and Wetland Habitats, Fish and Aquatic Resources, Water Quality, Land Use, Water Use/Water Supply, Power Generation
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas: Water Resources --water supplies, power generation, and diversions
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? No

Microsoft Exchange Server;converted from html;

From: Wufoo <no-reply@wufoo.com>
Sent on: Saturday, December 19, 2020 3:34:26 AM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#20]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name: Katie Goodwin
Title: CA Regional Director
Agency: Access Fund
Email: katie@accessfund.org
Address: 408 Home Street, Bishop, CA 93514
Phone: (303) 587-8039
I am interested in: Recreation Resources
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas.
I would have interest in being involved related to existing recreational resources in this area.
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? No

Follow up: Follow up
Follow up status: Completed
Completed on: Wednesday, February 3, 2021 7:51:00 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name: Danelle Gutierrez
Title (if applicable): Tribal Historic Preservation Officer
Agency / Organization (if applicable): Big Pine Paiute Tribe of the Owens Valley
Email: d.gutierrez@bigpinepaiute.org
Address: P.O. Box 700 825 S. Main Street, Big Pine, United States
Phone Number (Office): (760) 938-2003

- I am interested in the following resource areas:
- Aesthetic Resources
- Rare, Threatened & Endangered Species
- Botanical and Wildlife Resources
- Recreation Resources
- Cultural Resources
- Riparian and Wetland Habitats
- Fish and Aquatic Resources
- Socio-economic Resources
- Geology and Soils
- Tribal Resources
- Geomorphology
- Water Quality
- Land Use
- Water Use/Water Supply
- Power Generation
- Other Resource Information

Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas. Yes

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? No

From: [Wufoo](#)
To: [Carissa Shoemaker](#)
Subject: Lee Vining Hydroelectric Project [#21]
Date: Tuesday, January 12, 2021 1:28:32 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name	Danelle Gutierrez
Title (if applicable)	Tribal Historic Preservation Officer
Agency / Organization (if applicable)	Big Pine Paiute Tribe of the Owens Valley
Email	d.gutierrez@bigpinepaiute.org
Address	<input type="checkbox"/> P.O. Box 700 825 S. Main Street Big Pine United States
Phone Number (Office)	(760) 938-2003
I am interested in the following resource areas	<ul style="list-style-type: none">• Aesthetic Resources• Rare, Threatened & Endangered Species• Botanical and Wildlife Resources• Recreation Resources• Cultural Resources• Riparian and Wetland Habitats• Fish and Aquatic Resources• Socio-economic Resources• Geology and Soils• Tribal Resources• Geomorphology• Water Quality• Land Use• Water Use/Water Supply• Power Generation• Other Resource Information
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas.	Yes
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)?	No

Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)

Yes

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below:

Yes

Name Sally Manning

Email s.manning@bigpinepiaute.org

Name Cheryl Levine

Email c.levine@bigpinepaiute.org

Microsoft Exchange Server;converted from html;

From: Wufoo <no-reply@wufoo.com>
Sent on: Wednesday, January 13, 2021 3:43:19 PM
To: Carissa Shoemaker <Carissa.Shoemaker@erm.com>
Subject: Lee Vining Hydroelectric Project [#22]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name: Maria Jesus
Agency / Organization: California Native Plant Society
Email: conservation@bristleconecnps.org
Address: 2305-C Ashland St #217, Ashland, OR 97520, United States
Phone Number: (425) 327-7822
I am interested in the following resource areas: Rare, Threatened & Endangered Species, Botanical and Wildlife Resources, Riparian and Wetland Habitats, Geology and Soils, Land Use, Water Use/Water Supply, Other Resource Information
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas. No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)? No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies or

From: [Wufoo](#)
To: [Carissa Shoemaker](#)
Subject: Lee Vining Hydroelectric Project [#23]
Date: Monday, April 19, 2021 2:09:20 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name	Naomi Jensen
Title (if applicable)	President/CEO
Agency / Organization (if applicable)	TEAM Engineering & Management, Inc.
Email	naomi@teambishop.com
Address	<input type="checkbox"/> 459 W Line St Suite A Bishop, CA 93514 United States
Phone Number (Office)	(760) 872-1033
I am interested in the following resource areas	<ul style="list-style-type: none">● Rare, Threatened & Endangered Species● Botanical and Wildlife Resources● Cultural Resources● Riparian and Wetland Habitats● Fish and Aquatic Resources● Geology and Soils● Tribal Resources● Water Quality● Land Use● Other Resource Information
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas.	No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)?	No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)	No

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below:

No

Thank you for your time. Please provide any additional comments and/or questions regarding the Lee Vining Hydroelectric Project, Pre-Application Document, or relicensing.

Local Environmental consulting firm out of Bishop, CA. We would like to be considered as a qualified subcontractor for technical studies, bio and cultural surveys, and ongoing monitoring and reporting programs.

From: [Wufoo](#)
To: [Carissa Shoemaker](#)
Subject: Lee Vining Hydroelectric Project [#24]
Date: Tuesday, June 15, 2021 10:10:03 AM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Name	Naomi Jensen
Title (if applicable)	President/CEO
Agency / Organization (if applicable)	TEAM Engineering & Management, Inc.
Email	naomi@teambishop.com
Address	<input type="checkbox"/> 459 W. Line St Suite A Bishop, CA 93514 United States
Phone Number (Office)	(760) 872-1033
I am interested in the following resource areas	<ul style="list-style-type: none">● Rare, Threatened & Endangered Species● Botanical and Wildlife Resources● Cultural Resources● Riparian and Wetland Habitats● Fish and Aquatic Resources● Geology and Soils● Tribal Resources● Water Quality● Other Resource Information
Please indicate if you would like to be involved in any Technical Working Groups (TWGs) that will be informed to address the following resources areas.	No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)?	No
Based on information presented on this website or the Public Outreach meeting of October 6, are you aware of additional studies, or resource management plans that may be relevant to the project area and/or resource (describe)	No

Is there a representative other than yourself you would like to designate as an additional contact for potential follow-up by SCE or SCE's representative for the resource area(s) checked above? Please indicate their contact information below:

No

Thank you for your time. Please provide any additional comments and/or questions regarding the Lee Vining Hydroelectric Project, Pre-Application Document, or relicensing.

We provide local environmental monitoring and consulting services in the Eastern Sierra and would like to be considered as a subcontractor or local contractor for monitoring services. We carry WBE certification, and have biologists, geologists, and archaeologists on staff. We can mobilize quickly to Lee Vining and have knowledge of local concerns.

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Lee Vining, FERC Project No. 1388

INITIAL TWG MEETING AGENDA November 17, 2020; 8 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Martin Ostendorf, SCE
Matthew Woodhall, SCE
Audry Williams, SCE
Alan Partridge, SCE
Seth Carr, SCE
Lyle Laven, SCE
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Shannon Luoma, Kleinschmidt
Carissa Shoemaker, ERM
Matthew Harper, Kleinschmidt
Heather Bowen Neff, SWS
Lynn Compas, HRA
Adam Cohen, SWS
Brad Blood, Psomas
Steve Norton, Psomas
Allison Rudalevige, Psomas
Edith Read, E Read Associates

Agencies & Interested Stakeholders

Chase Hildeburn, State Water Resources Control Board
Greg Reis, Mono Lake Committee
Justin Barrett, USFWS
Bartshe Miller, Mono Lake Committee
Steve Bowes, NPS
Brian Adkins, Bishop Paiute Tribe
Geoff McQuilkin, Mono Lake Committee

Robert Di Paolo, Mono Lake Committee
Chris Shutes, California Sportfishing Alliance
Dean Tonenna, Mono Lake Kutzadikaa Tribe
Sheila Irons, USFS
Claire Landowski, Mono Lake Committee
Nora Gamino, USFS
Diana Pietrasanta, USFS
Blake Engelhardt, USFS
Ashley Blythe-Haverstock, USFS
Lawson Reif, USFS
Tristan Leong, USFS
Nathan Sill, USFS
Dan Yarborough, USFS
Gordon Martin, USFS
Thomas Torres, USFS
Brandy Wood, CDFW
Nick Buckmaster, CDFW
Alyssa Marquez, CDFW
Paul Pau, LADWP
Saeed Jorat, LADWP
Sue Burak, Snow Survey Associates
Jason Small, Mono Lake Committee
Heather Beeler, USFWS
Chad Mellison, USFWS
Charlotte Lange, Mono Lake Kutzadikaa Tribe (via phone)

2. Welcome and Introductions

- Matthew Woodhall welcomed everyone to the meeting and provided a safety minute
- Shannon Luoma reviewed meeting guidelines, how to ask a question and the meeting agenda. She then asked participants not part of the relicensing team to introduce themselves (see attendee list above).
- Matthew Woodhall and Finlay Anderson introduced the Relicensing Team
- Carissa Shoemaker reviewed the TWG meeting goals, objectives and expectations of participants.

3. Project overview/Relicensing Process

- Matthew Woodhall reviewed the SCE relicensing process and the goals and objectives of relicensing the Lee Vining Project in addition to a brief Project Overview.
- Finlay Anderson provided an overview of the FERC Process, relicensing schedule and what the role of the TWG is in the relicensing process.
 - Question was asked for clarification on “maintaining current operations” and wondering if what is really meant is ‘maintaining conditions that contribute to current operations’
 - Response: Correct, what is meant by no changes to operations is that SCE currently does not anticipate making changes to operations as laid out the current FERC license.

4. Discussion of Existing Environment

- Heather Neff presented Water Resources, Operations, Hydrology and Geology and Soils.
 - Operations and Water Management / Hydrology
 - Question: Can you describe the property damage component of Tioga operations in more detail? What's the concern there/past historical context?
 - Response: In heavier snow years there are occasionally ice dams across the reservoir and if they're not cut up by the time Tioga spills, it will back up into the Tioga Lodge area and potentially result in property damage.
 - Tristan: Just trying to understand limitations which we'll define later - appreciate the context.
 - Question: Will SCE be developing a hydrology dataset for the past ~30 years of project operations? Will SCE be developing an operations model for the project? How will any TWG interact with these developments?
 - Response: We likely have the dataset available, we have not confirmed that we'll be developing an Operations Model. This would be a study plan that should be discussed in context of FERC's study plan criteria; need to review the rationale. The current plan is to let the FERC/TWG process run its course and see if there is a need to developing a model.

- Tristan seconds the request and need as it relates to the USFS desire to reduce annual consultation on operations and have set schedule moving forward.
 - Fish and Aquatics
 - Question: Can resource agencies get a copy of the studies in an effort to not reinvent the wheel? Specifically, the fish instream flow studies; who wrote them and what were the methods?
 - Response: Conceptually there is no problem sharing data, it's more a matter of how to transport it. The relicensing team will review the instream flow studies we have and come up with a plan to get them over to Tristan.
 - Water Quality
 - Question: Was the Low DO in Tioga was confined to the hypolimnion?
 - Response: Great question, that's something we can discuss during a TWG meeting.
 - Question: Was fecal coliform measured in the upper watershed?
 - Response: Fecal coliform was measured upstream and downstream of the campgrounds in the lower Lee Vining canyon.
 - Participants were asked to state their interest in joining a TWG by typing it into the chat box. A detailed list of those who requested to join a TWG is provided at the end of this meeting summary.
- Steve Norton and Allison Rudalevige presented Terrestrial Resources, including wildlife, botanical, RTE and floodplains and wetlands.
 - Question: Are there opportunities to request additional surveys for golden eagles?
 - Response: Places where there are consultation requirements or regulatory guidelines such as ESA, Bald and Golden Eagle Protection Act, Incidental Take Permits, etc. The relicensing team plans to adhere to those requirements. There may be an opportunity, as the TWG and study plans develop, to request such a survey.
 - No additional comments or questions were raised for this resource area.
- Audry Williams presented Cultural and Tribal Resources
 - It was noted that regardless of involvement in the individual TWGs, the Tribal and Cultural Study Plans will be circulated to the interested tribes and tribal involvement in the execution of the plans is not limited to TWG members.
 - No additional comments or questions were raised for this resource area.
- Matt Harper presented Recreation and Land Use Resources
 - Project Boundary
 - USFS noted that the primary access roads to Poole PH and Saddlebag are not in currently in the project boundary.
 - Response: Correct. Neither Poole PH Rd nor Saddlebag Rd are currently within the project boundary.

- Question: Why isn't the stream gage below the Poole PH within the boundary?
 - Response: The map needs to be updated. SCE has recently amended the gaging plan and the gage below the Poole PH that was used to measure flow is has been relocated up near Ellery and is currently within the project boundary.
- Comment: The land at the Poole Powerhouse is National Forest System lands and not owned by SCE.
 - Response: Land ownership is one of the topics the relicensing team would like to discuss with the FS.
- Recreation
 - Question: Given the precipitous increase in day use, hiking, fishing and unregulated dispersed camping, and all associated impacts, are there opportunities for SCE to install more restrooms and provide assistance to INF to help sign/manage high level of use?
 - Response: This is a topic to be discussed during the TWG meetings. As part of the relicensing process we will assess what the current recreation usage is and use this information to help inform additional studies as well as any potential adjustments to future recreation plans.

5. Schedule & Next Steps

- Finlay and Carissa discussed next steps and reviewed the TWG meeting calendar.
 - All meeting materials, including the PowerPoint presentation and tentative schedule for upcoming TWG meetings will be posted to the Relicensing Website (<https://www.sce.com/leevining>)
 - As of right now all meetings through early July 2021 are expected to be virtual meetings.
 - Question: Given that we've sort of gone through this exercise for Bishop Creek - is there the expectation we would use the same format? Similar study outlines etc? (Study plans, not process)
 - Response: Yes, we will post a link to the Bishop Creek Study Plans as examples for format and to use as templates. We may not be going as far with the study plan development on the same timeline as we did with Bishop.

6. TWG Participants

Table 1 includes those who identified themselves as being interested in specific TWGs during the meeting. Agencies and interested stakeholders are encouraged to email carissa.shoemaker@erm.com to be added to a TWG.

Table 1. TWG Participant List (Updated as of January 12, 2021)

TWG Name	Participant Name	Tentative meeting dates
Aquatic Resources*	Tristan Leong, USFS	Mondays:* January 25, 2021 February 22, 2021 March 29, 2021 <i>*Operations TWG is currently scheduled to be part of Aquatic Resources, but may be broken out separately as needed.</i>
	Todd Ellsworth, USFS	
	Chad Mellison, USFWS	
	Nathan Sill, USFS	
	Nick Buckmaster, CDFW	
	Sue Burak, Snow Survey Associates	
	Chris Shutes, CA Sportfishing Alliance	
	Sheila Irons, USFS	
	Chase Hildeburn, State WRCB	
	Paul Pau, LADWP	
	Saeed Jorat, LADWP	
	Geoff McQuilkin, Mono Lake Committee	
	Alyssa Marquez, CDFW	
	Adam Perez, LADWP	
	Eric Tillemans, LADWP	
	Ed Hancock, Lahontan Regional WQCB	
Gaye Mueller, Mono County Fish and Wildlife Commission		
Claire Landowski, Mono Lake Committee		
Greg Reis, Mono Lake Committee		
Terrestrial Resources (includes wildlife and Botany)	Brian Adkins, Bishop Paiute Tribe	Wednesday mornings: January 27, 2021 February 24, 2021 March 31, 2021
	Blake Engelhardt, USFS	
	Thomas Torres, USFS	
	Nathan Sill, USFS	
	Chad Mellison, USFWS	
	Heather Beeler, USFWS	
	Alyssa Marquez, CDFW	
	Bartshe Miller, Mono Lake Committee	
	Sheila Irons, USFS	
Cultural/Tribal	Ashley Blythe-Haverstock, USFS	Wednesday afternoons: January 27, 2021 February 24, 2021 March 31, 2021
	Dean Tonenna, Mono Lake Kutzadikaa Tribe	
	Reba Fuller, Tuolumne Band of Me-Wuk Indians	
	Sheila Irons, USFS	
	Charlotte Lange Mono Lake Kutzadikaa Tribe	
	Brian Adkins, Bishop Paiute Tribe	
	Christina McDonald, North Fork Rancheria of Mono Indians of California	
	Remainder of tribal/cultural list	
Recreation/Land Use	Bartshe Miller, Mono Lake Committee	

TWG Name	Participant Name	Tentative meeting dates
Recreation/Land Use	Nick Buckmaster, CDFW	Thursdays: January 28, 2021 February 25, 2021 April 1, 2021
	Nora Gamino, USFS	
	Lawson Reif, USFS	
	Sheila Irons, USFS	
	Steve Bowes, NPS	
	Jora Fogg, Friends of the Inyo	
	Katie Goodwin, Access Fund	



MEETING SUMMARY*
LEE VINING, FERC PROJECT NO. 1388
AQUATIC TECHNICAL WORKING GROUP
JANUARY 25, 2021, 10AM -12PM

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date and focus on stakeholder questions and comments. These notes are not a verbatim account of proceedings and do not represent any final decisions or official documentation for the project or participating agencies.*

1.0 OBJECTIVE

- To describe FERC criteria for the inclusion of study plans
- To understand TWG participants’ resource management objectives, related data gaps, and (wherever possible) relevant potential study requests

2.0 ATTENDEES

Relicensing Team Members

Seth Carr, SCE
Lyle Laven, SCE
Matt Woodhall, SCE
Jillian Roach, ERM
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Shannon Luoma, Kleinschmidt
Heather Bowen Neff, Stillwater
Adam Cohen, Stillwater

Facilitation Team

Terra Alpaugh, Kearns & West
Mike Harty, Kearns & West

Technical Working Group Members

Nick Buckmaster, CDFW
Alyssa Marquez, CDFW
Chris Shutes, California Sport Protection Alliance (CSPA)
Ron Goode, North Fork Mono Tribe
Todd Ellsworth, USFS, Inyo National Forest
Tristan Leong, USFS
Nathan Sill, USFS, Inyo National Forest
Monique Sanchez, USFS
Chad Mellison, USFWS
Claire Landowski, Mono Lake Committee (MLC)
Greg Reis, Mono Lake Committee
Chase Hildeburn, State Water Resources Board (SWRB)

3.0 COMPILED ACTION ITEMS

- Mono Lake Committee will provide State Board studies and recommendations pertaining to restoration and geomorphic flows in the area below the LADWP diversion dam; and LADWP sediment studies around the diversion dam.

- The Relicensing Team will distribute a link to the Bishop Creek Study Plan and an updated study plan template for TWG members to fill out by Feb 17, 2021.

4.0 WELCOME & INTRODUCTIONS

Matt Woodhall, SCE Project Manager for the Lee Vining Relicensing, welcomed TWG members to the meeting and introduced the Relicensing Team (“Team”) as well as the facilitators from Kearns & West that will be supporting the Aquatics TWG. The facilitators are intended as resources for the TWG members to help to promote communication between them and the Team.

Finlay Anderson, the Team Lead, stated that the notes from the November kickoff meeting have been finalized and posted on the website. The Team reported on two follow-up items from that meeting: first, there was interest in existing instream flow studies; they do not yet have the data from those studies, but they do have the WUA curves which are informative. Second, the data is showing low dissolved oxygen in Tioga Lake in the hypolimnion in May and September; they will further characterize this in the pre-application document (PAD).

Comments and questions from TWG members are summarized below:

- Comment (C): USFS reiterated a point discussed at the November meeting: they would like a better understanding of reservoir and hydrology operations so that the new license can memorialize them in some way; currently, there are regularly late season requests for variances that need to be approved. USFS would like to eliminate that need.
 - Response (R): The Team asked that they explore how to phrase that in the form of a study plan or informational request.

5.0 TWG PURPOSE & OBJECTIVES

Finlay Anderson summarized the FERC scoping process and referred participants to the memo distributed before the meeting for additional detail. During the TWG process, the Relicensing Team will educate TWG participants about how the project operates, and TWG participants will share their priorities for the project area (i.e., management objectives) and the list of related questions they want answered. Assuming those questions have a nexus to the project, the Team will try to answer those questions through the study process. FERC will utilize that administrative record to support its environmental review under the National Environmental Protection Act (NEPA), analyzing the study results along with the license application outlining proposed operations to determine project impacts and whether issuing a new license is in the public interest.

Finlay shared that the Team is deciding whether to follow a Traditional Licensing Process (TLP) or an Integrated Licensing Process (ILP). SCE is leaning toward a TLP but wants to hear if anyone has concerns about it, since FERC will need to approve that process choice, and they will take public feedback into account in their decision.

Comments and questions from TWG members are summarized below:

- C (USFS): Given COVID uncertainties, we may not want to lock ourselves into a more “strict” ITP format with harder deadlines/required meetings. For now, I would recommend Traditional as appropriate for this project.

- C (CSPA): Need for ILP may depend on willingness of SCE to provide information up-front, e.g., in providing hydrology and operations model within the PAD. NGOs tend to disfavor TLP because it offers less opportunity for non-agency participants.

6.0 DISCUSSION OF RESOURCE MANAGEMENT OBJECTIVES

Finlay Anderson described the FERC criteria for study requests; he explained that studies are intended to inform operations and provide the natural resource agencies with the information they need to make management decisions about the resources in the project area. The Team wants to avoid studies that are “solely academic,” i.e., providing information that will not impact how the Project is operated and managed.

To that end, the Team needs to understand stakeholder’s objectives/desired future conditions for the project area as well as any information/data they think is missing. Those will inform the necessary studies. TWG participants provided feedback on their objectives and missing information in the following areas: hydrology & operations, geology & soils, fish & aquatics, and water quality. Their feedback is organized by topic below.

Hydrology & Operations

- Q (MLC): There are State Board studies of the area below the LADWP diversion dam and independent scientific recommendations that DWP increase peak flows in the springtime to benefit restoration efforts in that reach. How does this process consider studies that have already been done and recommendations that already exist?
 - R (Relicensing Team): The Team asked MLC to share those studies but also pointed out that anything downstream of the LADWP diversion dam is not part of the SCE project. In FERC’s NEPA analysis of the new license proposal, they will look at what the project effects will be on a given resource with current operations as the baseline. So if MLC wants to discuss restoration goals below the diversion dam, they will need to explain the nexus to the project.
 - C (CSPA): MLC can submit the studies to SCE and recommend that they be considered for analysis in the PAD. In regard to the nexus issue, LADWP cannot release more water than is provided by the hydropower operation upstream (beyond a very small amount of storage); therefore, they do not have means to increase releases to create a geomorphic flow. There is a clear project effect on LADWP’s ability to provide flows for restoration, so the licensing process should take this issue into account. SCE has a choice of whether it will consider these kinds of impacts or make a hardline determination that anything downstream is not a project effect.
 - R (SCE): It sounds like this is a timing issue in that SCE does not create or divert any water within the system. SCE manages the lake level to a certain elevation. The lake occasionally must spill, and spills cannot be used for hydropower.
 - R (MLC): Yes, the issue is the dampening of peak flow. Anytime flows exceed 250 cfs LADWP shuts off their diversion, so flows bypass the diversion entirely and provide geomorphic benefits. In middle water year types, however, SCE stores peak flows rather than allowing them to proceed downstream. Ensuring peak flows make it downstream could be achieved via year-to-year discussions, but it might be better to address those needs as part of this process. It is unclear whether and how much LADWP has communicated to SCE about these objectives.

- C (CDFW): SCE does not have water rights in the system, so they are managing the reservoir to meet recreational needs and LADWP water rights. The TWG should encourage the development of an operations model. Flood flows through the project's bedrock streambed will not achieve the same benefits as they do below the LADWP dam in the alluvial areas.
- R (Team): It would help to understand the scope of an operations model and how it supports management objectives, including USFS desired conditions. The TWG will need to help define the study question more precisely.
- C (CSPA): It is important to have an operations model to answer a host of questions. In other relicensings, the applicant has put together a hydrology data set and released it along with the PAD to inform discussions throughout the relicensing process. An operations model informs stakeholders' understanding of how the project functions and fits into the local east-side grid; for instance, if it is important to be able to turn the powerhouse off and on easily, then TWG participants should understand that, so that their requests do not compromise that ability. To this end, the operations model should include daily and sub-daily data. This will enable TWG participants to assess whether the relicensing is in the public interest or not. CSPA suggests breaking off hydrology and operations from the aquatics conversations and accelerating it.

Geology & Soils

- C (USFS): The Lee Vining watershed has a large component of metamorphic rock. There is mass wasting on Tioga Road, which is an ongoing problem every year when they reopen the road. It is not necessarily part of operations but something to be aware of.
- C (USFS): The new Forest Plan outlines desired conditions for soils, not necessarily for geology but for erosion. There are some must dos as well as desired conditions for plants. The Team should look at the Forest Service Surveys for the west side of the Inyo National Forest (available on the NRCS website). For the Hoover Wilderness area, there may not be a soil survey but if it exists, it would be in the NRCD soil datamart.
- Q (CDFW): How much sediment would normally be moving out of the project area? That could exist or it might be a data gap. The relicensing might want to consider a sediment transport mechanism.
 - C (USFS): I think he is asking for a sediment budget.
 - C (MLC): DWP has some studies of the diversion dam, where they are required to bypass sediment. Will send studies along.
- C (USFS): During the last relicensing, Psomas did a lot of monitoring geologies and geomorphic and riparian habitat. Very good info to use.

Fish and Aquatics

- C (CDFW): CDFW's fish data suggests a significant shift in the system from brook to brown trout. Since brown trout are a more voracious predator, this would be a concern if it were happening more widely. Brown trout are also two to three times more difficult to catch than brook trout, so the shift could depress overall angler success in the area. This change could be the result of overall warming of the water or because the study was conducted in the drought, but it was a significant shift they would like to know more about.
- C (CDFW): CDFW has found *Didymo* in the project area; they would like to know the distribution and potential to spread to other watersheds, since it can depress trout production in streams.
 - R (Team): The *Didymo* is currently restricted to the reach below Saddlebag Dam.
 - R (CDFW): That is where it has been identified, but there have not been systematic surveys. It would be important to identify recreation users of that reach because *didymo* is spread by people wading in the infected reach and then visiting other areas. It is

difficult to identify the project nexus, because the reasons for the infestation (e.g., nutrient concentrations, reservoir storage) are unclear.

- C (CDFW): This area is one of the most productive trout fisheries in the State, so the health of the aquatic life is very important to the local community.
- C (CDFW): Could be useful to understand the extent and density of the didymo under different flow regimes and seasons, in order to understand if operations are impacting the extent and density of invasive species.
- C (USFS): The new Forest Plan outlines the vegetation and aquatic species USFS wants measured and the water temperatures that are required to maintain species integrity. Those standards should be incorporated as the guiding framework for conditions under the new licensing.
- C (North Fork Mono Tribe): When you say rainbow trout are non-native because you raised them and planted them, it makes them susceptible to a different form of policy compliance, all of course to benefit your ideals, rather what agency you are. It makes it easy for you to not see them as native, and yet unless you are Indigenous, you are not native, but you are still a species here just like the trout. No need to discuss, just pointing out that when you say “non-native” for a species that is native then it minimizes how we view the species.

Water Quality

- C (USFS): USFS did a wilderness lake ANC study that included some of the Hoover Wilderness lakes about 10-15 years ago in the mid-2000s looking at susceptibility to acid deposition. It was an internal Forest Service study, but it is published and summarized.
- C (SWRB): From a preliminary perspective, studies similar to the ones being done for Bishop Creek are likely sufficient, but the Board does not know yet whether there will be additional specific parameters that need to be considered.
- C (USFS): The USFS has had robust conversations lately about using e.coli rather than fecal coliform as an indicator. If there is a nexus with the project, USFS will want SCE to use e.coli.
- C (USFS): Can we acknowledge the significant recreation management context of this project and how that recreation relates to other studies (e.g., water quality, fish studies)? The project is surrounded by recreation opportunities that create potential nexuses with the project and bring up management considerations.

7.0 SCHEDULE & NEXT STEPS

The Relicensing Team proposed coming to the next meeting with a list of potential study titles. To facilitate that effort, they requested that TWG participants fill out and submit the study plan template for areas of interest. USFS suggested that it could be helpful to look at the studies being conducted for the Bishop Creek Relicensing; while there will be some site-specific studies, there are likely many studies with similar rationale and methodology that could be transferred over. In response, the Relicensing Team agreed to (a) share the final Bishop Creek Study Plan as approved by FERC for reference and (b) modify the study plan template to pinpoint areas where there are significantly different interests and/or rationale that need to be identified. Once the updated template is distributed, TWG participants are asked to give feedback by Feb 17, 2021.

8.0 UPCOMING TWG MEETINGS

Aquatics 2	February 22, 2021 10am
Terrestrial 2	February 24, 2021 10am
Cultural and Tribal 2	February 24, 2021 1:30pm
Recreation and Land Use 2	February 25, 2021 10am
Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am



MEETING SUMMARY*
LEE VINING, FERC PROJECT NO. 1388
AQUATICS TECHNICAL WORKING GROUP
FEBRUARY 22, 2021, 10AM - 12:30PM

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date and focus on stakeholder questions and comments. These notes are not a verbatim account of proceedings and do not represent any final decisions or official documentation for the project or participating agencies.*

1.0 OBJECTIVE

- Develop comprehensive list of study plan titles and rationale to be further developed in advance of the next meeting

2.0 ATTENDEES

Relicensing Team Members

Seth Carr, SCE
Lyle Laven, SCE
Al Partridge, SCE
Matt Woodhall, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Shannon Luoma, Kleinschmidt
Heather Bowen Neff, Stillwater
Adam Cohen, Stillwater

Facilitation Team

Terra Alpaugh, Kearns & West
Mike Harty, Kearns & West
Mark Sebarrotin, Kearns & West

Technical Working Group Members

Nick Buckmaster, CDFW
Alyssa Marquez, CDFW
Chris Shutes, CSPA
Todd Ellsworth, USFS, Inyo National Forest
Nathan Sill, USFS, Inyo National Forest
Thomas Torres, USFS, Inyo National Forest
Monique Sanchez, USFS
Chad Mellison, USFWS
Claire Landowski, Mono Lake Committee
Greg Reis, Mono Lake Committee
Chase Hildeburn, State Water Resources Board
Paul Pau, LADWP

3.0 COMPILED ACTION ITEMS

1. Technical Working Group Members (TWG) to submit comments and feedback on meeting summary notes at earliest convenience.
2. Relicensing Team (Team) to post finalized notes from January TWG on the Relicensing Website.

3. Team to follow up with SCE staff and MLC to understand constraints around ramping, historical operations, and any concerns about ramping rates.
4. Team/TWG to assess the fish survey work planned for the upcoming summer to assess whether it can inform the study plan effort.
5. Nick Buckmaster to share study of lake with high nitrogen levels.
6. Greg Reis will provide a paper on *didymo*.
7. SCE to review Mono Lake Committee's proposed study request re: downstream restoration objectives/peak flows and come to next meeting ready to discuss.
8. MLC will send two additional study requests for hydropeaking and information sharing within the next few days.
9. The Team will continue to flesh out goals and objectives and rough methods for the studies discussed today and will plan to continue the conversation at the next meeting.

4.0 WELCOME & INTRODUCTIONS

Mike Harty, the facilitator, welcomed TWG members to the meeting and provided a review of the agenda. Mike asked participants to send any additional edits to the January TWG meeting notes, so that the Relicensing Team ("Team") can post them on the project website by the end of the week.

Finlay Anderson, the Team Lead, addressed questions he received from TWG members about the homework provided on February 5th. At the request of TWG participants, the homework provided the Bishop Creek Study Plan as a reference. The Team's intention in sharing the Study Plan was not that TWG participants should read the entire document but that because the Bishop Creek relicensing process is further along, there might be some study types or generic objectives in that study plan that would also be applicable to Lee Vining and would provide a framework and draft language to build upon. The Team did not intend to suggest that the projects were identical or that the exact studies or methods from Bishop were appropriate for Lee Vining. Finlay noted that if TWG members who have not been involved in the Bishop Creek process have questions about what has been completed to-date and next steps in that process, he would be happy to set up a separate call to address those questions.

Finlay also addressed the interest voiced at the last TWG meeting in having a separate work group to address operations and hydrology. The Team has decided to continue to incorporate operations and hydrology into the Aquatic Work Group for now but is open to dividing into separate work groups in the future if discussions are exceeding their allotted time. Their primary aim is to respect participants' time and to be as efficient as possible. CSPA thanked them for their explanation.

5.0 DISCUSSION OF RESOURCE OBJECTIVES

Finlay Anderson described the FERC criteria for study requests; he explained that studies are intended to inform operations and provide the natural resource agencies with the information they need to make management decisions about the resources in the project area. To that end, the TWG's three main objectives are to identify 1) desired future conditions, 2) data gaps, and 3) potential study requests to fill those gaps. The Team shared studies being considered by other TWGs, acknowledging that some of them will overlap with the aquatic studies under consideration (e.g., the botanical TWG is also interested in a study on invasive aquatic plants).

Finlay proposed that the group annotate the Bishop Creek template to reflect aquatic and hydrologic interests in the Lee Vining project area. Based on the TWG's input, the Team will solidify a list of study titles with goals and objectives for discussion at the next meeting.

Thus far, the Team has received study requests from CDFW and Mono Lake Committee.

The studies identified thus far are listed below, along with a summary of comments and questions made by the TWG members with respect to each study.

Study Title: Instream Habitat Assessment

The purpose of this study is to provide qualitative habitat mapping to better understand trout habitat suitability.

- Comment (C) (CDFW): The steep grade of the upper stream reaches might not be suitable for an IFIM study, though that methodology could be used in the lower reaches; however, the study does not need to be heavily quantitative. Qualitative habitat mapping might be more appropriate since an objective evaluation of trout habitat in lower reaches is needed. A look at other methods used at Bishop Creek for steeper reaches might be insightful.
- C (CDFW): CDFW is most interested in viability and spawning time, so that operations can avoid interrupting spawning with large releases. Suggested adding “assess habitat conditions/suitability for trout” and “determine operational constraints around trout spawning periods” as objectives.
- Question (Q) (Team): The Team has some WUA curves from the 1990s, which may still be relevant given the stability of the channel. Is CDFW interested in spawning habitat?
 - Response (R) (CDFW): CDFW is not focused on spawning habitat given the limited gravel.

Study Title: Operations Model

The purpose of this study and creation of an Operations Model to better forecast and plan water budget, allocation, and operations.

- C (Team): The Bishop Creek Operations model was complicated given the number of intakes and reservoirs. It would be helpful to understand what the goals and objectives are for a Lee Vining Model so that the Team can design it appropriately.
 - R (CSPA): A hydrology dataset is useful for understanding the frequency at which lakes/reservoirs fill to capacity, the frequency and duration of spills, and the ability to meet instream flow requirements. A rough operations model could provide clarity on how much water is moving through system on monthly basis, what operations might look like on a daily basis, and the balance between the volume of instream flows and hydropower production. Understanding SCE's operational priorities for the project (e.g., What do seasonal and daily power needs look like? Is the project crucial as a power source for areas on the eastside or in Yosemite?) will help stakeholders better understand the tradeoffs of their requests. For instance, stakeholders have expressed interest in peaking operations downstream but need an operations model to understand the consequences of those operations on SCE's power production. The model does not need to be complex; a spreadsheet tool would be sufficient.
- C (Team): Understanding regulatory, contractual, and physical constraints of the system will be useful. There are also agency interests related to reservoir levels for recreation.
- Q (SCE): CSPA mentioned concerns about current ramping rates. It would be helpful to have those in writing.
 - R (CSPA): Will defer to MLC staff to provide more detail. Concerns are related to whether the speed of ramping could create a public safety concern.

- R (Team): The Team will follow up to better understand any constraints around ramping and how the project has been operated historically.
- C (MLC): An operations model seems like a good idea and ties into the study plan request submitted by MLC this morning. The model could be used to evaluate how difficult it would be to achieve downstream goals.

Study Title: Fish Distribution Baseline Study

The purpose of this study is to evaluate species composition, size distribution, and abundance of fish populations in Project reservoirs and Project-affect stream reaches; the study provides a snapshot of current conditions.

- Q (Team): What metrics are CDFW interested in? Sustainability of brook and brown trout?
 - R (CDFW): The goal of this study will be to evaluate the current trout population in the river – e.g., size, distribution, and density, and maybe growth of representative members of each size class. All these metrics are related to instream habitat conditions and the bioenergetics of system. We have 2014/2015 data that showed trout densities and a significant species switch, which we are interested in.
 - R (Team): The Team has data from 1998-2016; suggest repeating existing survey methodology to assist comparability of the results.
 - R (CDFW): There is some monitoring being done this year; should refresh ourselves on its scope.
- C (CDFW): CDFW wants to include the reservoirs as part of monitoring; they were not monitored as part of the license but should be assessed given angling pressure. Doing a mark-recapture study to assess density is probably not worth it, but the other metrics would be useful.
 - Q (Team): Given that the system is heavily stocked, it could be difficult to differentiate between the impacts of the stocking efforts versus project operations on the population. What would the specific goals and objectives of the study be?
 - R (CDFW): While most fish are from the hatchery, there is no data to show whether wild self-sustaining fish are present and what their conditions are. Wild populations are present alongside hatchery fish in other lakes at similar altitudes. This data will provide the CDFW and USFS management teams a baseline from which to reassess their objectives. For instance, if a wild population is present, it could shift agency focus from hatchery operations to maintaining habitat for the wild population.
 - R (SCE): Would a creel survey and fishermen interviews provide adequate information?
 - R (CDFW): CDFW wants an actual fish survey. Stocked trout are very susceptible to angling; therefore, creel surveys will disproportionately pick-up hatchery fish. Creel surveys also target peak hours, whereas the big brown trout of interest tend to be caught in stormy weather and at dawn or dusk. Even in places where we know wild brown trout are present (e.g., Twin Lakes), they do not show up in the creel surveys. Fishermen are not always a good indication of the fishery.
 - C (Team): Our goal is to make sure the scope and methods are commensurate with the expressed interest and goals. The Team will propose some methods (e.g., gill nets) and continue the discussion at the next meeting.
- Q: Does CDFW or USFS have any plans to change the species composition of the fish populations in the project?
 - R (CDFW): CDFW is not planning on changing the species composition.

Study Title: Water Quality

The purpose of this study is to provide information for the 401 certification and the NEPA/CEQA analysis and provide SCE flexibility to operate as a project and adequately maintain its facilities. Ideas for metrics

include: *E. Coli* monitoring, water temperature, turbidity, dissolved oxygen, and other standard water quality metrics.

- Q (Team): Is there anything unique about the Lee Vining system or Lahontan plan that we need to be aware of for specific goals and objectives, or specific parameters we need to reference? A water quality study is being discussed in the Recreation TWG in relation to recreation use, but water quality issues need to be addressed here. The Team is anticipating a simple water quality exploration, given that they do not have a reason to expect water quality issues in the project area.
 - R (CDFW): Interested in looking at profiles in the reservoir, given the problems with invasive algae in the project area. All these lakes are nitrogen limited, but one nearby lake nearby ended up with five times as much nitrogen as expected; if released downstream, that level of nitrogen could cause algal blooms. Data from profiles would be an important metric to consider alongside hypothetical nitrogen loading from recreational uses. CDFW will look up the relevant data set and share it with the Team.
 - C (Team): You could be referring to Adam Cohen's dataset, which includes nitrogen and phosphorus data for all three project reservoirs. If there is another dataset, that would be helpful.
 - C (CDFW): If there is existing data on those metrics, then there is no need to additional collection.
 - R (Water Board): Agree with that sentiment. The Board is more concerned with any flagged water quality issues in the watershed as well as establishing baseline conditions. The Board noted that Bishop Creek's water quality study plan included a recreation component, but they are not familiar with the recreation levels along Lee Vining.
 - R (Team): It would be worth identifying recreation needs in the approach.
- C (Team): We need to ensure that whatever is certified allows regular O&M activities.
- C (Team): At the last meeting, heard an interest in monitoring for *E.coli* rather than fecal coliform. Fecal coliform is a parameter that is a part of a lot of basin plans, but the water quality study could diverge from that standard or monitor for both.
- C (Team): We anticipate including a *didymo* survey in the water quality study plan.
 - R (MLC): MLC will provide a paper on *didymo*.

Study Title: Sediment and Geomorphology

Purpose: The purpose of this study is to determine sediment flux to inform alluvial reach. The study can deepen understanding of sediment loss, movement and distribution.

- Q (Team): There are some existing data and studies available to reference. According to the operators, SCE has not had to remove much sediment from the project area, so the Team's operating assumption is that not much sediment is impaired by the project. Existing information suggests there is coarse sediment movement in the downstream reaches. CDFW voiced interest in alluvial fan management in that area – is that within the project area or further downstream?
 - R (CDFW): The need for sediment management will be limited given the steepness of the stream. Any fines present would be a limiting resource. Interest in sediment management would be focused on the downstream alluvial reach (not actually an alluvial fan), where erosion and deposition need to be carefully balanced.
 - R (MLC): MLC offered to provide studies on this topic; many are hard copy. In 2005, the LADWP diversion dam was modified to include a sediment diversion.
 - R (Team): We have the R2 Study done in 2002.
 - R (MLC): That should have all the pertinent information.

- Q (Team): Are you interested in a spawning gravel availability assessment? If so, using what methods?
 - R (CDFW): CDFW is interested in what sediment is present, the D₅₀ values for various stream reaches, and whether project operations are resulting in the loss of fines over time. Is there an efficient way of moving sediment from reservoirs downstream to make it available for geomorphic processes?
 - R (Team): It is not clear how much sediment is currently being trapped in the reservoir. Sounds like CDFW's interest is in understanding how fines are moving through the system and if there is the potential to move them more intentionally. The Team is still trying to understand where there is a project nexus versus where these questions relate to broader basin priorities.
 - R (CDFW): Sediment trapping is a reservoir impact in most systems. MLC can provide more information about stream incision concerns.
 - C (MLC): My impression is that the diversion dam does not trap fines; the larger sizes do settle out, so that is what the sediment bypass focuses on moving. We assume CalTrans cut slopes produce more sediment than would usually be eroded, but we are not aware of studies on that, though it could be addressed in the R2 report. It would be useful to know what fines might be trapped in reservoirs and if it is significant, should be considered for mitigation.
 - C (CDFW): We do not know if loss of sediment over time and stream incision are problems but would like to check.

Study Title: Mono Lake Committee-proposed study on downstream peak flow objectives

Greg Reis provided a brief description of the restoration efforts below the downstream LADWP diversion dam. In addition to the mechanical restoration work already underway, scientists recommended higher peak flows than currently reach the diversion dam in order to mimic the geomorphic impacts of natural flows as much as possible. Greg provided a PowerPoint with information on how flows are currently impaired and what their goal flows might be; they are not sure whether releasing peak flows could be operationalized given the constraints of the system. The intent of MLC's requested study would be to assess whether those peak flows could be achieved and what the impacts would be on project operations and competing objectives (e.g., reservoir levels for recreation). Greg noted that releases above 250 cfs would likely not be a hydropower generation issue in wet years because the water would be spilled anyway; instead, it would be a question of the timing of the spills. An operation model might help to identify the years when implementing these flows for downstream objectives would have less impact on generation.

- C (SCE): SCE asked for time to review MLC's full request and suggested discussing it in more detail at the next meeting.
- C (CSPA): This sounds like a request for spill management in order to achieve geomorphic goals downstream of the diversion dam. Ideally, the group could determine how to achieve these goals with minimal impacts to generation and recreation values. It could be a nice example of cooperation.
- C (MLC): Changing the spill timing on Tioga in wetter years might be low hanging fruit. The PowerPoint suggests releasing 40 cfs out of Saddlebag as a way to get most of the way to the needed volume; MLC would like to focus on whether that is feasible.

6.0 SCHEDULE & NEXT STEPS

MLC will send two additional study requests for hydropeaking and information sharing within the next few days. The Team will continue to flesh out goals and objectives and rough methods for the studies discussed today and will plan to continue the conversation at the next meeting.

7.0 UPCOMING TWG MEETINGS

Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am



MEETING SUMMARY*
LEE VINING, FERC PROJECT NO. 1388
AQUATIC TECHNICAL WORKING GROUP
MARCH 29, 2021, 10AM - 12:30PM

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date and focus on stakeholder questions and comments. These notes are not a verbatim account of proceedings and do not represent any final decisions or official documentation for the project or participating agencies.*

1.0 OBJECTIVE

- Finalize study plan titles, refine goals and objectives
- Discuss outstanding areas of concern

2.0 ATTENDEES

Relicensing Team Members

Seth Carr, SCE
Al Partridge, SCE
Matthew Woodhall, SCE
Martin Ostendorf, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Shannon Luoma, Kleinschmidt
Heather Bowen Neff, Stillwater
Adam Cohen, Stillwater

Technical Working Group Members

Alyssa Marquez, CDFW
Chris Shutes, CSPA
Paul Pau, LADWP
Greg Reis, Mono Lake Committee
Nathan Sill, USFS, Inyo National Forest
Monique Sanchez, USFS
Chad Mellison, USFWS
Sue Burak, Snow Hydrology

Facilitation Team

Terra Alpaugh, Kearns & West
Mike Harty, Kearns & West

3.0 COMPILED ACTION ITEMS

- Relicensing Team will:
 - 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.

4.0 WELCOME & INTRODUCTIONS

Mike Harty, the facilitator, welcomed TWG members to the meeting and provided a review of the agenda and action items and outcomes from the February meeting.

Finlay Anderson, the Relicensing Team (“Team”) Lead, reported that he and SCE met with LADWP to better understand the Settlement Agreement related to the LADWP Diversion Dam and how downstream diversions are conducted. They believe this background will help them better understand downstream interests and any intersections with Lee Vining Project operations.

5.0 DISCUSSION OF STUDY PLAN REQUESTS

Finlay shared the kinds of studies being considered in the other resource areas and a list of the study topics requested by stakeholders within the aquatic resource area that are being considered for inclusion in the study plan. Those study topics are as follows (in parentheses are the associated study titles being proposed by SCE to encompass each topic):

- 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 (new since last TWG; existing information)
- Hydropower peaking operations (new since last TWG)
- Information sharing constraints (new since last TWG)

Finlay also highlighted the study elements that have been requested, but which the Team does not feel meet the FERC rationale for inclusion. First, MLC requested a Peak Flow Study to restore conditions downstream of LADWP diversion dam. The Team does not find a clear nexus for Project operations downstream of the diversion dam that would justify this study. However, the proposed Operations Model and hydrology data set supporting it will provide the information needed by MLC to make comparisons with its Synthesis Report. Second, there was a request for a water quality assessment at Hwy 120 road pull-outs and dispersed camping areas near Project reservoirs. Similarly, the Team asserts that Hwy 120 has no nexus to project operations or maintenance in that it is a California State Highway maintained by Caltrans; dispersed camping is also not related to or affected by Project operations or maintenance and existed prior to the Project’s existence.

Feedback from TWG participants is summarized below:

- Question (Q) (MLC): The lack of nexus for a peak flows study is surprising in that the only difference between the current peak flow and the goal peak flow is due to SCE operations. If there is not an adequate nexus to address this question in the relicensing, what would the process be to get project operations to change to enable us to achieve the downstream restoration objectives?

- Response (R) (Team): There will be a conversation about project operations later today. SCE is not proposing a change in operations under the new license. MLC is proposing a change in operation, but that is not how the NEPA process works. To the extent that there is information in the operations model that will support an understanding of resource objectives downstream, SCE will provide that information for MLC's use.
- R (MLC): The operations model seems like it will provide the information requested by the Peak Flows Study. Is a change in operations still something that could get included in the new license without a study? Or is a study a prerequisite for an operations change?
- R (Team): No, a study is not a prerequisite. Any operational change would need to be proposed to FERC along with an effects analysis (i.e., how that change would impact the environment), but we can analyze the impacts as long as there is available information. If we want to analyze the effects of a change in operations later in the process, that will still be an option.
- R (SCE): SCE explained that they manage the water that comes into the system-- that volume of water, along with the reservoir volumes and mandated storage levels, constrains their operational choices. There may be a misconception that SCE is chasing generation. The operations model will explain how water is moved through the system and what choices are available at any given time.
- Q (USFS): Will the conclusion on the lack of nexus between dispersed camping and water quality be shared with the recreation group? Our staff with recreation expertise is in that group and will need to evaluate that conclusion.
 - R (Team): Yes, we will cross-reference this conversation with the recreation group.
[ACTION ITEM]

The studies proposed thus far are listed below, along with a summary of comments and questions made by the TWG members with respect to each study. The studies are divided into three categories – first, those that the Team agrees meet the criteria for inclusion in the study plan and proposes to continue developing; second, those they agree meet the criteria but for which they believe the requested information may already exist; and third, those that were proposed recently and are still under consideration.

Studies for inclusion in the Study Plan

For each study, the Team outlined the objectives, the rationale/project nexus, and the proposed study area. The only questions or comments raised were with regards to the Operations Model; a summary of that discussion is included in that section.

Study Title: Aquatic Habitat Assessment and Sediment Characterization

The purpose of this study is assess habitat conditions for managed fisheries within stream reaches downstream of Project reservoirs AND characterize sediment condition for managed fisheries in the Project Area, thereby combining two of the study requests into a single study.

Study Title: Operations Model

The purpose of this study is creation of an Operations Model to assist SCE and stakeholders in understanding how Project operations interact with stream flows and reservoir elevations; the model will accommodate physical and hydrographic constrains to operations, including lake elevation controls at Saddlebag. Later in the process, the Ops model will ensure that PM&Es under consideration are feasible given the historical hydrograph.

- Q (CSPA): Do you know what platform you will use for the Ops Model and if it will be publicly available?

- R (Team): Probably excel.
- C (CSPA): Sometimes there are issues representing reservoirs with excel so relicensing teams have used ResSim, but Excel has the advantage of being much more accessible.
- R (Team): The Team still needs to understand the bathymetry and constraints of the reservoirs, which will inform us whether something more sophisticated is needed, but SCE staff generally have a good idea of the rating curve of each reservoir, which allows them to be accurately represented in Excel.
- Q (CSPA): Would the model be available to relicensing participants?
 - R (Team): Transparency is important, but there are also concerns about handing a model over to non-experts given the complexity of the system and the possibility of misusing or misunderstanding the model results. We will need to develop protocol for information sharing. This will be a continued conversation.
 - C (CSPA): In the western Sierra, there have been good experiences with licensees sharing excel models, which allow relicensing participants to thoughtfully look at operational options and weed out approaches that are not feasible; this saves time for consultants/operators so they do not have to run all the options. CSPA is in favor of frequent communication and review of modeled scenarios.
 - C (SCE): Agree with what you are saying. The nuances of the model will be outlined in the Study Plan, and the inputs will be transparent. When we get further along, we will address accessibility; sometimes when the model is shared and people do not actually understand it, it creates more work. One approach is to convene this TWG to QA/QC the model and get consensus on the reliability of the outputs, and then work together to determine which scenarios to run.
- Q (CSPA): Have you considered the timestep of the model? CSPA recommends a daily model since that timestep will be important for many of the questions participants are interested in.
 - R (SCE): Better understanding management goals will help us understand what timestep is needed.
- Q (CSPA): Assume that outputs will include generation, true powerhouse output, stream flows in the project-effected reaches above and below the Powerhouse?
 - R (SCE): That all sounds reasonable. Will assess whether additional nodes are needed.
- Q (CSPA): Will you put together a hydrology dataset and share it with participants?
 - R (Team): Yes, that will be a prerequisite for the model.
 - C (CSPA): There should be a description of general operations in the PAD, along with the hydrology dataset. It is important to establish that baseline understanding now.
- C (USFS): USFS supports sharing the operations model; it is important for us to be able to run scenarios; the TWG can always review results together to ensure a shared understanding.

Study Title: Stream Fish Populations

The purpose of this study is to assess species composition, density, and age-distribution of existing trout fishery in stream reaches downstream of Project reservoirs.

Study Title: Reservoir Fish Populations

The purpose of this study is to assess species composition, density, and age-distribution of existing trout fisheries in Project reservoirs.

Study Title: Aquatic Invasive Plants and Algae

*The purpose of this study is to assess the extent and distribution of invasive aquatic plants and algae (including *Didymosphenia germinata*) in stream reaches downstream of Project reservoirs.*

Study Title: Water Quality Assessment

The purpose of this study is to assess water quality within Project-affected stream reaches and Project reservoirs.

Studies that may be met with existing information

Study Title: Benthic Macroinvertebrate Study

The Team stated that the expressed purpose behind this study request was to develop baseline benthic macroinvertebrate (BMI) characteristics. There are several data sets on BMI for the project area -- from the Sierra Nevada Aquatics Research Lab (SNARL), the CDFW lab, and Adam Cohen's thesis work -- which together span from the early 2000s to 2017. Cohen's work compares BMI communities downstream of project reservoirs with those downstream of natural lakes over multiple seasons for several years; he was examining drivers of community structure difference and found that interannual hydrologic variability overwhelmed all other potential drivers of difference. The Team believes these datasets are robust and meet the needs of the study goals and objectives.

Feedback included:

- Q (CDFW): CDFW proposed the study and was not aware of this data. Great that there are existing comparative studies. What level were the BMI identified to in Cohen's study?
 - R (Team): Chironomids were identified to tribe or sub-family taxonomic level; all other taxa were identified to genus or species.
 - C (CDFW): Please circulate this data and study. **[ACTION ITEM]**
- Q (CDFW): Is there a way to see what the project flows were during the time period of Cohen's study?
 - R (Team): The Project flow data is summarized in the paper, but all the data is also available online through USGS.
- C (CDFW): Want to look through the data presented today in more detail to ensure there is not anything else that would be useful, but this appears to be what I was picturing.

Newly proposed studies under consideration

MLC submitted two additional study requests since the last meeting. The group's discussion about both proposed studies is summarized below.

Study Title: Hydropeaking

SCE explained that they are still reviewing the request and are investigating what might have caused the peaks in 2015 and 2016 that the request identifies. At this point, they assume the peak resulted from an isolated grid situation, which generally occurs if they lose the Casa Diablo-Rush Creek line. When that occurs, the Lee Vining Project can carry the Mono Basin by passing 30-40 cfs through the plant. This situation occurs approximately twice a year and can last from 20 minutes to a couple days if the lack of connection is because the line has fallen. The time of

year MLC highlighted would not be the period in which they might increase generation load to meet State demands. The plant's constraints are a max of 110 cfs and a minimum of 10 cfs, which is required to meet minimum flow requirements.

Feedback included:

- C (MLC): It is good to hear that those kinds of peaks are not typical and look forward to hearing the confirmed cause. MLC has not looked much at the sub-daily data over the last couple years.
- C (Team): It would be helpful to know what percentage of the time the Project operates in the ranges MLC identified.
- C (Team): MLC was also interested in the impacts of ramping on stage change downstream in terms of safety implications. To provide a sense of how sensitive the creek is to flow changes, one study showed that when releases were ramped from 0 to 109 cfs, there was a stage rise of 1.7 feet over 1.5 hours a quarter mile downstream; at the LADWP Diversion Dam, the change was 0.9 ft over 45 minutes.
- Q (CSPA): Is the general operating mode not to peak? That is, are the peaks in MLC's graph exceptional?
 - R (SCE): The intent is to meet the demands of the system, so Lee Vining operates on a ramping model, but it is limited to flows between 10 and 110 cfs, as well as other constraints like reservoir levels.
- Q (CSPA): Do you think the need for peaking will increase? Or is that less of a factor in this location?
 - R (SCE): Isolated situations will always continue to happen. Also, the more renewables that come online, the more important the ability to peak becomes.
 - Q (CSPA): Is that all influenced by the State or is there a local element?
 - R (SCE): Lee Vining is part of the state-wide grid overseen by California Independent System Operator (CAISO); the Project does not provide local power except in exceptional circumstances.
 - C (CSPA): It would be helpful to know the frequency of these events when the Project has to provide power locally.
 - C (SCE): In 2017, because it was a wet water year, Lee Vining did not run as a peaking plant because of the need to pass water consistently; ran 110 cfs through the plant.
- C (Team): Separating out the water year types might be helpful in order to drill down on when and how frequently these localized events occur.
 - C (MLC): It is concerning that these peaking events might be more common in the future. Any downstream studies that get at whether this is a problem or could become a problem if it became more frequent or extreme would be useful.

Study Title: Information Sharing

The Team is not sure whether this is a study request or more of a request for a dialogue. They asked MLC to share more about what they see the need as.

MLC explained that prior to 2000, SCE staff were more willing to share information; for instance, operators shared monthly operations sheets upon request. MLC's perception was that information sharing was constrained after deregulation. This is a challenge: USGS does not post reservoir level information until six months after the end of the water year (currently, MLC can access data through Sept 30, 2020); CDEC provides information on Saddlebag and Gem Lakes, but MLC has to make assumptions about Tioga and Ellery. The delay of data means lack of

reliable information on runoff, which impacts downstream work. More sharing of preliminary data before it is finalized by USGS – for instance, if that information was available on a real-time website or even via a phone call – would be very useful. The idea of the study request was to look at what SCE’s constraints are in terms of sharing information; i.e., can any solutions for information sharing elsewhere be implemented here? What are the reasons for lack of data sharing? Could they be changed?

Feedback included:

- R (SCE): There are always concerns about preliminary data being misinterpreted. We want to understand more about what you need and what the nexus is to the relicensing. More discussion on this topic is welcome.
- C (CSPA): This may not need to be a study plan, but the interest is in what the constraints are for sharing real-time info. There are ways of addressing the concerns about provisional data that address licensees’ concern about being taken to task for imperfect data. Our interest is in understanding what the real concerns are for SCE.
 - R (SCE): Agree with your statements. Do not see that as a study but want to continue the conversation.

6.0 SCHEDULE & NEXT STEPS

The Team explained that the PAD will not have complete study plans, but it will have detailed outlines of the proposed studies. The PAD will be filed in August. SCE will be proposing a TLP, so there will be a joint agency meeting to discuss that in the late fall.

The next meetings will be:

- A meeting focused on hydrology data and operations in about a month (early May)
- A May 24 full TWG meeting

CSPA asked what SCE will approach in-person versus virtual TWG meetings once COVID restrictions have been lifted. SCE said that their thought is to have a mixture of in-person and virtual meetings. CSPA asked SCE to provide a web option even at in-person meetings and not to limit it to a conference line for those who are remote to ensure continued participation.

7.0 UPCOMING TWG MEETINGS

Aquatics 4	May 24, 2021 9:30am
Terrestrial 4	May 26, 2021 10am
Cultural and Tribal 4	May 26, 2021 1:30pm
Recreation and Land Use 4	May 27, 2021 10am



MEETING SUMMARY*
LEE VINING, FERC PROJECT NO. 1388
AQUATIC TECHNICAL WORKING GROUP
MAY 24, 2021, 9:30AM -12:30PM

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date and focus on stakeholder questions and comments. These notes are not a verbatim account of proceedings and do not represent any final decisions or official documentation for the project or participating agencies.*

1.0 OBJECTIVE

- To discuss hydrology and operations updates in accordance with stakeholder requests.
- To present SCE's proposed study plans and solicit feedback.

2.0 ATTENDEES

Relicensing Team Members

Seth Carr, SCE
Lyle Laven, SCE
Matt Woodhall, SCE
Martin Ostendorf, SCE
Finlay Anderson, Kleinschmidt
Isha Deo, Kleinschmidt
Shannon Luoma, Kleinschmidt
Heather Bowen Neff, Stillwater
Adam Cohen, Stillwater

Facilitation Team

Terra Alpaugh, Kearns & West
Mike Harty, Kearns & West
Lindsay Tryba, Kearns & West

Technical Working Group Members

Alyssa Marquez, CDFW
Nick Buckmaster, CDFW
Chris Shutes, CSPA
Paul Pau, LADWP
Greg Reis, Mono Lake Committee
Claire Landowski, Mono Lake Committee
Sheila Irons, USFS
Nathan Sill, USFS, Inyo National Forest
Monique Sanchez, USFS
Chad Mellison, USFWS
Sue Burak, Snow Survey Associates

3.0 COMPILED ACTION ITEMS

- Kleinschmidt will add Sheila Irons to the Lee Vining distribution list.
- Chris Shutes will send SCE an example of analysis the Water Board did on intraday operations driven by the market, and SCE will distribute it to the Team.

- SCE will send the existing stage-discharge data to Nick Buckmaster.
- Nathan Sill will follow up on motorized craft regulations on Tioga and Ellery Lakes and whether SCE could receive an exception.
- Nick Buckmaster will send SCE a document about the impact of temperature fluxes on species.
- TWG members will submit comments to Heather and/or Finlay about any resource questions they want the peaking study to examine.
- Finlay Anderson will talk to the SCE team to determine the final week to submit comments on proposed studies.
- Sue Burak will contact Andy Rouse and ask for his input on the studies, especially the proposed study on Aquatic Invasive Plants and Algae.

4.0 WELCOME & INTRODUCTIONS

Finlay Anderson, the Relicensing Team (“Team”) Lead, welcomed TWG members to the meeting, introduced the Team, and provided an overview of the March TWG meeting. He reported on action items from that meeting, which included updating study plans to accommodate the group’s feedback, circulating Benthic Macroinvertebrate data and Adam Cohen’s associated study, and continuing discussions with the Recreation TWG about the lack of nexus between the Project and the water quality near dispersed camping sites.

5.0 HYDROLOGY AND OPERATIONS

Finlay Anderson explained that SCE has collected data and worked with the Lee Vining Project powerhouse operators to analyze past short-term flow increases and decreases. Historically, these kinds of abrupt changes in flow have been the result of grid-related events, plant-trips, and other short-term outages. Since approximately 2016, SCE has been operating Poole Powerhouse to respond to load demands, as requested by power markets (CPUC); these kinds of demands result from daily fluctuations in supply from solar and other renewables, seasonal heat wave events that increase load, and fires and fire prevention activities. These events and release schedules comply with the FERC license and Sales Agreement.

SCE records daily average flows below Poole Powerhouse, but the data does not provide the resolution needed to examine intra-day releases. To fill this need, LADWP provided SCE with ten years of 15-minute data from their diversion five miles downstream of the Powerhouse; however, Finlay cautioned that the data is not reviewed and collected according to USGS standards and incorporate flows from unregulated tributaries (e.g., Warren Fork) below the Powerhouse. The Team is reviewing this data with the goal of characterizing the frequency and magnitude of short-term resource optimization events as measured at LADWP diversion. The Team did not show specific data at this meeting but proposed including this kind of analysis as part of the study plan.

The Team stated that given that this mode of operations is relatively new, there is a nexus that justifies examining potential impacts of this type of operation on resources downstream of the Powerhouse (e.g., fish habitat and populations, bird habitat) down to the LADWP diversion. The Team will develop a study plan outline and objectives for inclusion in the PAD. SCE will review additional literature to find comparable streams and similar operations for reference and will identify any existing data-sources that may supplement information gaps. SCE believes that most questions can be addressed by expanding the existing studies and looking at the relationship between flows and resources of interest, which may require new equipment installation to understand stage-discharge relationships in key areas.

The Team asked for TWG members to submit comments in writing about any resource questions they want the study to examine **[ACTION ITEM]**. As part of the PAD filing, the Team will also address all the parts of MLC's initial hydropeaking study request, which aspects they incorporated, and any aspects they felt were outside the relicensing scope. There will be opportunities for further TWG input on the study plan after the PAD filing.

TWG member questions and comments are summarized below:

- Question (Q) (CSPA): Will daily averages be included in a study plan? Will it include a post-processing or analytical tool that will allow you to look at different operations within a given day? Will it provide a technical means to look at this (as opposed to a narrative description of general practices)? It could also be both.
 - Response (R) (Team): The first step is to understand, describe, and talk about the ramifications of the operations. The Team is open to how this study ties to the Ops Model in that the Ops Model is currently focused on what controls releases on a daily basis; more discussion would be needed to understand how to expand it to cover intraday releases. Factoring owner prices and cues into a model might take it outside the scope of relicensing, in that those are largely economic decisions rather than strictly operational ones. Ideally, the study plans will help SCE focus on what should be addressed.
 - Comment (C) (CSPA): Assuming the Ops Model is on a daily timestep, agree that trying to integrate that with a shorter timestep would make it very cumbersome. Chris can share an example of analysis from the Water Board that looked at intraday operations to provide a general window into how operations followed load and market without getting into excessive detail. **[ACTION ITEM]**
 - R (Team): Appreciate any examples of how to link a daily model with sub-daily analysis.
- Q (MLC): Are there any additional requirements beyond the daily average requirements? Or is there flexibility as long as those are met?
 - R (SCE): SCE also meets instantaneous minimum flow requirements. Also, SCE operates within the parameters of daily recreational requirements to balance inflows and outflows to minimize the need for any spills at Rhinedollar Lake.

- Q (CDFW): Has SCE looked at stage changes in the channels during ramping and considered the possibility for fish stranding? How is flow ramping impacting fisheries? This should be an area of consideration for studies.
 - R (SCE): SCE conducted internal analysis to make sure that the channel has adequate water, and SCE doubled what they discovered was needed to prevent drying of the creek (5 cfs) to develop their minimum flow of 10 cfs. SCE has looked at stage-discharge relationships at one recreation site, but they are probably not well understood, so this is an area that SCE will likely consider further. We will hold this question for further discussion.
 - R (CDFW): CDFW would like to look at the existing stage-discharge data sets to determine whether they are adequate or not [**ACTION ITEM**].

6.0 AQUATIC RESOURCES: PROPOSED STUDIES

The Team presented the proposed studies that will be included within the PAD application. The studies attempt to respond to stakeholder management interests that have a nexus with the Project.

Proposed Study: Hydro Operations Model

This proposed study aims to develop a robust operations model (Model) to assist SCE and stakeholders in understanding how Project operations interact with Lee Vining hydrology. At past meetings, CSPA asked about whether the model would be developed as an excel tool or in ResSim; SCE and the Team reported that the rating curves for the reservoirs are high enough resolution that they should be able to develop a reliable model in excel.

- Q (CSPA): Will this study include a daily timestep?
 - R (Team): SCE will address this within the study plan. The Bishop Creek Ops Model is being done on a monthly time step. The Team is somewhat concerned about the ability to use the Lee Vining historic hydrologic record in a model that would accurately reflect reality on a daily timestep.
 - C (MLC): The issue with a daily timestep is that bathymetry, wind, and other factors can cause errors in modeled unimpaired flows at that resolution. On Lundy, the Water Management Team (which includes SCE, MLC, USFS, and CDFW representatives) is taking unimpaired flows and averaging them over a weekly period.
 - C (CSPA): CSPA recommends a daily timestamp, because of the differences in load between weekdays and weekends; because of a much lower weekend load, averaging demand/supply over a longer period can be misleading. CSPA supports the idea of an excel-based model that is easily accessible in the public domain.

Proposed Study: Reservoir Fish Populations

This study aims to obtain information on reservoir fish populations where information is lacking. The study will assess fish species composition, relative abundance, and age distribution within Project reservoirs.

- C (CDFW): There are not very many near-shore fish communities, so the beach seine methodology identified for this study may not yield much information. Electrofishing would be preferable.
 - R (Team): The Team also has concerns about using the beach seine approach, but they selected it because of the limitations on boat use in the reservoirs. They are interested in better understanding the USFS concerns about motorized craft in Tioga and Ellery Lakes and how they might get approval.
 - C (USFS): USFS said it could be a Wilderness restriction. They will follow up with the Ranger to determine if SCE could be authorized to use crafts to conduct surveys. **[ACTION ITEM]**
- Q (CDFW) Will SCE save the heads from the gillnetted fish to pull otoliths?
 - R (Team): Instead of otoliths, SCE is including in the study plan a scale assessment to evaluate age.

Proposed Study: Stream Fish Populations

This study aims to supplement existing information about Saddle Bag Lake and other fish populations downstream of the Project reservoirs. Also, it will assess species composition, density, and age-distribution of the existing trout population.

- C (CDFW): Nick Buckmaster will email the Team a document detailing the impact of temperature fluxes on species. **[ACTION ITEM]**

Proposed Study: Aquatic Habitat Assessment and Sediment Characterization

This study aims to determine habitat conditions for fisheries within Project streams and characterize baseline conditions of channel substrate, habitat types, spawnable gravel patches (i.e., coarse sediment), and potential habitat-related limiting factors for the trout population.

- Q (USFS): Does SCE have any plans to examine adjacent riparian areas using an approach similar to the SWAMP protocol, which looks at various cover types?
 - R (Team): The current proposal is only looking at riparian coverage, but SCE is open to the concept of incorporating something similar to SWAMP. SCE will look into the benefits of doing this.
- Q (CDFW): Is SCE planning to map habitat at one flow or multiple flows?
 - R (SCE): At the moment, the proposal is written to map habitat at one flow.
 - Q (CDFW): Would SCE consider mapping at higher flows to see how pool and ripple habitat changes?
 - R (SCE): SCE will consider it, but if there are specific areas of concern, then SCE could propose focusing on those. It might make more sense to complete the

initial study, understand the results, and then evaluate if another study is needed to analyze various flows. Any stage-discharge work proposed in the study plan could also inform this discussion.

Proposed Study: Aquatic Invasive Plants and Algae

This study aims to obtain a semi-quantitative estimate of the spatial extent and distribution of invasive aquatic plants and algae, with a particular focus on Didymo downstream of Project reservoirs.

- C (Snow Survey Associates): I will contact Andy Rouse and ask for his input on this study.
[ACTION ITEM]

Proposed Study: Stream and Reservoir Water Quality

This study aims to assess the consistency of Project reservoirs and Project-affected stream reaches with Basin Plan objectives to evaluate parameters obtained from reservoir profiles and *in situ* measurements.

7.0 SCHEDULE & NEXT STEPS

The Relicensing Team is on track to file the PAD by early August. The Team will distribute copies of the proposed study drafts during the week of May 31st, and then the participants will have three weeks to review the proposals and provide feedback. SCE will include responses to all comments within the PAD application. Again, the Team reiterated that the public could provide additional comments after the PAD is filed.

Lee Vining, FERC Project No. 1388

TERRESTRIAL AND BOTANICAL TWG 1 MEETING NOTES

January 27, 2021; 10 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Allison Rudalevige, Psomas
Brad Blood, Psomas
Carissa Shoemaker, ERM
David Moore, SCE
Edith Read, ERA
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Steve Norton, Psomas

Agencies and Interested Stakeholders

Alyssa Marquez, CDFW
Bartshe Miller, Mono Lake Committee (MLC)
Blake Englehardt, USFS
Chad Mellison, USFWS
Christina McDonald, North Fork Rancheria
of Mono Indians of California
Monique Sanchez, USFS
Nathan Sill, USFS
Thomas Torres, USFS

2. Compiled Action Items

-
- Blake Englehardt will send USFS records and whitebark pine layer to Allison Rudalevige directly.
 - The Relicensing Team will distribute a link to the Bishop Creek Study Plan and an updated study plan template for TWG members to fill out by Feb 19, 2021.

3. Welcome and Introductions

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and all participants
 - Review of notes/comments from November – good to be finalized
 - Chat box was disabled for at least 1 participant, tested it

4. Relicensing Process

-
- Finlay Anderson provided a FERC relicensing overview

5. Discussion of Resource Management Objectives / Potential Study Requests

-
- What issues would you like us to focus on?
 - Comment: MLC

- Resource issue – *Didymo* infestation and how flows may impact it. This is a new issue since the last license was issued.
- Response: Relicensing Team – It was discussed in the Aquatics TWG, but please provide anything you know about it, or make a case for including it in Terrestrial TWG.
- Comment: USFS
 - Tag on to MLC's comment, has Eurasian milfoil been mentioned? June Lake has it. Is it in LV canyon? Or other aquatic invasives in general? Can we broaden the scope to all invasive aquatics rather than only *Didymo*? The botanical framework from Bishop Creek would be good model to start with for Lee Vining Creek (initial thought). But there wasn't an aquatic invasive species survey for Bishop Creek.
 - Response: Relicensing Team - No other aquatic plant species were mentioned besides *Didymo* in Aquatics. We have decided to circulate the Bishop Creek study plans and determine which ones apply to Lee Vining Creek also, or how to adjust them for Lee Vining.
- Comment: USFWS
 - I'm focused on listed species. When we see issues with analysis it usually has to do with how a particular area has been managed in the past. Has management led to impacts to the listed species? Are we proposing to change management of the system? Grazing example. I am hoping there is good data showing how T&E species were managed the past 30 years (e.g., Yosemite toad). How will management in the next 30-40 years impact the species? Lack of monitoring of the toad, because they are hard to monitor. I suggest revisiting the previous study locations (from the 80s) and see what is going on now.
 - Response: Relicensing Team – We do want to study or look at historic data. What would help us is some language from USFS and USFWS around management objectives for the species so as we construct the study, we have guidance from management plans on how to protect the species. Then we will give you a consultation document so you can say 'yes, no effect', or the opposite. But we need you to help us with the process.
 - Comment: USFWS – We need to know where they are first, then we can determine the impacts, if any.
- Comment: CDFW
 - I don't have any study suggestions, but I'm thinking about how the proposal of a study would work. I'm new to the process. We need to understand what invasives could be in system but how they could be related to the operations of the project, if no changes are proposed. Since no changes, is it enough to say 'we don't know what species/invasives are there, and we have concerns'?
 - Comment/Response: USFS – The study plans are to learn about existing conditions and how they are affected by project operations, if operations are causing a resource concern or not meeting desired conditions then we can develop license conditions/management plans part of operations moving forward that improve/address the condition. Also to support NEPA. So we know what conditions to apply to the new license.

- Response: Relicensing Team – Operations may not be changing, but the Project does need to comply with changing regulations and agency/organization objectives. The Team reviewed the Study Plan Request Template.
- Comment: MLC
 - How about the Yosemite toad, would a study goal be ‘how current ops impact toads’? I know a population exists at the south end of Saddlebag Lake. People and dogs run through their habitat with the increased recreation there, during their tadpole life stages. There is also habitat along Lee Vining Creek below Saddlebag Lake. Are flows impacting toads there?
 - Response: Relicensing Team – I think what I am hearing is you’re asking if there is an indirect effect from project operation that impacts recreational use which then impacts toads. It is a worthwhile objective to write down and then we will synthesize it.
- Comment: USFS
 - To tag onto USFS/CDFW, in regard to *Didymo*, could frame a study that we have O&P components to reduce size of invasive populations, we can use that to show how a change in operations might expand the populations.
- Comment: SCE - This project has been in operations for a long time, we have quite a bit of information about the region to use as starting point. We can’t go in and look for everything, this is why we have these meetings to discuss with leads that know the system so they can bring forth things of concern. Examples of *Didymo* and Yosemite toad.
- Relicensing Team discussed the two primary studies SCE is already considering; wildlife and botanical:
 - Wildlife would be similar to Bishop Creek’s but include Yosemite toad specifically. It would be kept to the FERC project boundary to keep it related to the project. We would bring in data from previous years. Wildlife cameras could be installed as well.
 - Botanical on-the-ground fieldwork would be for RTE, Special Status Species, invasive weeds, and updated vegetation mapping, all at the same time.
 - The main questions are scope and scale, and we would need to agree on methods. Make it as efficient as possible for implementation.
- Comment: USFS – Is there already a synthesis of current info on the project? What is already being studied? Can we get a list of what is already happening?
 - Response: Relicensing Team – Already up on the project website (www.sce.com/leevining) are a list of Comprehensive Management Plans and a list of references we already have for the PAD. The references list includes studies that have been done in past. Draft PAD tables and figures are also on the website for your reference.
- Comment: USFS – Can you show us your botanical map for whitebark pine so folks know that it is present in the project vicinity. It is currently proposed to be listed as threatened. Your suggested approach of coinciding botanical survey tasks makes total sense.
 - Response: Relicensing Team - Very old whitebark pine data, from herbarium records. Few from 2016 and 2017. We would complete a floristic compendium of all the species observed.

- USFS knows of some occurrences by Saddlebag dam, the USFS GIS data layer has it shown. We should consider adding this data to our PAD. Blake can send USFS records and whitebark pine layer to Allison directly.

6. Schedule & Next Steps

- The Relicensing Team provided the Bishop Creek study plan applicability preview, folks wanted to see what was done for Bishop Creek and suggest modifications for Lee Vining Creek. However, we need to be disciplined about not only doing Lee Vining studies because they were done at Bishop. We (consultants) are not as good at knowing your resource management objectives as you (agencies). We are asking for your help in guiding us with these. Revised homework will include a link to Bishop Creek study plans, ask you if you think the study is applicable to Lee Vining Creek, and if applicable we need project specific details. The template is to give a framework. We would give you a little time to populate this and for next meeting we'd ask you to bring it back.
 - Bartshe Miller and Nathan Sill said the applicability template looks helpful
 - MLC - Will the Bishop example have stated goals and objectives?
 - There is a link to original Bishop study plans are on website, and a link in the template word doc.
- The Relicensing Team reviewed the upcoming TWGs timeline. Does this time work for the upcoming meetings? The March meeting week might be during kid's spring break. Email Carissa Shoemaker with conflicts (carissa.shoemaker@erm.com).
- Chad Mellison is unavailable for next two proposed dates.
- SCE reminds us that everyone can ask questions throughout, not only during the meetings. And we can do our best to give out notes to those that can't make meetings. We can also work on individual meetings with you, as needed.
- Chad Mellison – Yosemite toad questions can be sent to Chad at any time.
- Draft meeting notes to be circulated for review as well as the memo of Bishop Study Plans.
- Meeting invitations for February and March to be sent out
- Additional action items are underlined above

7. Upcoming TWG Meetings

Aquatics 2	February 22, 2021 10am
Terrestrial 2	February 24, 2021 10am
Cultural and Tribal 2	February 24, 2021 1:30pm
Recreation and Land Use 2	February 25, 2021 10am
Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388

TERRESTRIAL AND BOTANICAL TWG 2 MEETING NOTES FEBRUARY 24, 2021; 10 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Allison Rudalevige, Psomas
Brad Blood, Psomas
Carissa Shoemaker, ERM
Edith Read, ERA
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Steve Norton, Psomas

Agencies and Interested Stakeholders

Alyssa Marquez, CDFW
Bartshe Miller, Mono Lake Committee (MLC)
Blake Englehardt, USFS
James "Jim" Erdman, CDFW
Monique Sanchez, USFS
Thomas Torres, USFS
Todd Ellsworth, USFS

2. Compiled Action Items

-
- CDFW to send information on bighorn sheep in the area
 - CDFW to send the new Sierra Nevada red fox report when it becomes available
 - Psomas will send the USFWS dissertation about mark-recapture of Yosemite toad from UCSB, if publically available: *David Martin. 2008. Decline, Movement and Habitat Utilization of the Yosemite Toad (Bufo canorus): An Endangered Anuran Endemic to the Sierra Nevada of California.*
 - CDFW/USFS to provide the plans/documents regarding the translocation of Sierra Nevada yellow-legged frog to the project vicinity
 - Relicensing team and USFS to confirm that everything USFS intended to share with us was received (e.g. rare and invasive plants data, high priority species list)
 - Relicensing team to delete the USFS Bishop Creek comments from 2018 that are included currently in the study requests list
 - Peak flow study – keep on table for future discussion

3. Welcome, Introductions, Review of Notes and Other TWGs' Potential Studies

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and all participants via the chat window
 - Review of notes/comments from January

- No comments or questions received
- Finlay Anderson listed the potential studies / study requests that are being discussed in the other resource TWGs. SCE intends to make sure that on an ongoing basis, the subject matter experts for each TWG are communicating with each other so that TWGs can ensure that interdisciplinary objectives are covered.
 - USFS agreed that aquatic invasive species should be addressed in Aquatics TWG.

4. Discussion of Resource Management Objectives / Potential Study Requests

- Relicensing team reviewed each potential study request received to date
- **Riparian community / black cottonwood study**
 - Comment: Relicensing team
 - The elevation at the project may be too high for black cottonwood, it has not been documented it in the basin during the relicensing monitoring. There is no abundance data available for black cottonwood in the project area.
 - Comment: CDFW
 - This request was copied from Bishop Creek, so it may not apply to Lee Vining Creek.
 - Comment: USFS
 - Why are there no riparian monitoring sites in the lower reaches?
 - Response: Relicensing team - The farther downstream you go (e.g., Glacier Creek and downstream of Slate Creek), the harder it is to determine what is natural versus project-related influence. Accretion flow increases in this area, which is why the sites were limited. We believe the three chosen monitoring sites are representative of the conditions of Lee Vining Creek.
 - Comment: USFS
 - I think there are cottonwood in the lower reach. I would like to visit the site to see. The lower portion may be more disturbed/susceptible to project influence. It seems that the lower reaches would be more affected by development. I'd like to leave the Riparian study as a question mark and keep discussing it.
 - Comment: CDFW
 - I agree with USFS, I was surprised that there were only 3 sites and concerned that they might not be enough to get an understanding of the project. We should continue to consider this study.
 - Comment: Relicensing team
 - There are 3 sites, with 4 transects each (12 total transects). The next round of monitoring is this year in July/August.
 - Comment: MLC
 - If there is a peak flow impairment study it would include the system downstream. That could have impacts on riparian systems downstream to LADWP's diversion point.
 - Response: Relicensing team - We're trying to separate baseline impacts to operations impacts. We need to assess them based on our studies and

knowledge of the system how the future ops will affect resources. We will also update the project's environmental management to current land management objectives and standards. As far as a peak flow study goes, let's think about how that would work. I don't think there is a proposal to change Edison's operations at this point. Let's keep a peak flow study on the table and figure out what that would mean.

- **Invasive Plants**
 - Comment: Relicensing team
 - Aquatic invasive plants (e.g. Didymo and milfoil) will be addressed in the Aquatics TWG
 - Comment: USFS
 - We need to ensure that recreation sites are assessed for terrestrial invasive plants.
 - Comment: USFS
 - The study request from USFS overlap with what we have already included from CDFW.
- **Wildlife**
 - Comment: Relicensing team
 - The currently proposed wildlife study would not specifically target mule deer (specific to Bishop Creek because of wildlife crossings), willow flycatcher (include in general habitat assessment), goshawk specific (no known occurrences), or bats (bat habitat assessment was specific to Bishop Creek because there were known bats in the powerhouse; no known occurrences in Poole Powerhouse).
 - Comment: Relicensing team
 - Raptor habitat and mesocarnivores would be covered in the general wildlife study.
 - Comment: CDFW
 - CDFW's wildlife program has more info on bighorn sheep in the area. I can provide this info to the team. Sierra Nevada red fox report is in the works and should be coming out too, I will provide to team when it's available.
- **Yosemite Toad**
 - Comment: CDFW
 - We know Yosemite toad is in the area, there have been decent number of studies, but are old. This study is proposing to look at inlets and outlets to see if we can figure out where they are, since we don't know for sure. All life stages would be assessed. Also, a mark-recapture study is requested.
 - We have data from Saddlebag and Ellery lake that is 15 years or older, that Yosemite toad is using the areas for breeding. Data shows larvae only (not adults), which are easier to detect because they stay in one place. We are hoping to do a long-term mark-recapture study here and in the broader area to figure out where they are and what they're doing. Swabbing for Bd/Chytrid fungus would be good as well.

- Comment: Relicensing team
 - The USFWS has dissertation about mark-recapture of Yosemite toad from UCSB, this may answer some of the questions you have. Psomas will find this report and send it out to CDFW, if publically available. It is referenced in the conservation strategy for Yosemite toad.
- Comment: USFS
 - Thanks to CDFW's Jim Erdman for being on the call to speak for the toad. I have the same concerns about the Yosemite toad. Is a mountain yellow-legged frog study needed here?
 - Response: CDFW - We feel we have enough data about the Sierra Nevada yellow-legged frog that a study isn't needed. This summer, frogs may be relocated from Yosemite NP to Maul Lake [southwest of Saddlebag Lake], this project was funded and scheduled but paused because of Covid-19. The Sierra Nevada yellow-legged frog is expected to be in Saddlebag watershed in 2021.
- Comment: CDFW
 - There is only one study saying Yosemite toad are not eaten by brook trout because they are unpalatable. We base stocking on their use of ephemeral ponds not the lake itself. It would be a good idea to reassess all of the toad sites and get a handle on their population.
 - Response: Relicensing team - The challenge is to determine the project nexus rather than the academic reasons for the study. May be hard to tie this to the project. We would like to be careful about ensuring that scope of data collection efforts around the Yosemite toad is commensurate with the potential regulatory needs, also keeping in mind that the baseline condition is the current operations.
- Comment: Relicensing team
 - Can we get the plans/documents regarding the translocation of Sierra Nevada yellow-legged frog?
 - Response: USFS - I have the proposed action for the translocation and can share the plans with CDFW's permission. It is in the special use permitting process right now.
- **Riparian Birds**
 - Comment: CDFW
 - The study doesn't necessarily need to be called 'focal', it's more of a general riparian bird study. I still intend to discuss this with specialists, this is a study that is often overlooked in FERC projects. The nexus is that operations impact hydrology, which impact riparian vegetation, which impacts the essential habitat. It could be combined with other riparian studies. Is there suitable habitat for these species in the FERC boundary? Often the riparian birds need a two-tiered habitat structure. Trying to get a baseline of what is out there. The existing studies are downstream in the LADWP area.
 - Comment: Relicensing team

- What would we consider the baseline? This project has been here as it is for a long time (1960s), so that would be our baseline for looking at operations. We would struggle with an impacts assessment that compares impacts with a natural hydrograph. However, there's a lot here that we can accommodate in a general wildlife survey.
- Response: CDFW – The dams change the hydrograph, just using it as an example. Not necessarily need to compare to the hydrograph. Can use ERA's previous data to compare. I agree that we need to talk about this study more to find nexus and determine the level of effort needed.
- Comment: Relicensing team
 - ERA has been looking at the trend line of how vegetation is doing under existing operations, riparian bird discussion is based on habitat, ERA's studies would help with that. Downstream of Slate Creek is tricky, because natural vs Edison's impacts is harder to determine.
- Comment: USFS
 - In the agenda I saw something about wetlands and floodplains, were there study requests for those?
 - Response: Relicensing team – No study requests have come in for wetlands and floodplains. Yes, they were listed in the agenda as a topic covered in this TWG. The FERC regulations require that the environmental reports cover known information, but if sufficient information exists to characterize the resource and there are no questions about project operations, this is sufficient.
- Comment: Relicensing team
 - Can we get the list of USFS high priority species from USFS? And the rare plant and invasives data as well?
 - Response: USFS – Yes, I thought I sent it. We need to make sure everything I intended to send made it to your team. And you can delete the Bishop Creek comments from 2018 that I sent.

5. Schedule & Next Steps

- Relicensing team will review the requests in further detail, brainstorm, and come back for next TWG with some clearer outlines and questions for TWG.
- We still need to determine how detailed we will describe each study in the PAD. If we have areas of disagreement we will surface those sooner than later.
- Additional action items are underlined above.

6. Upcoming TWG Meetings

Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388

TERRESTRIAL AND BOTANICAL TWG 3 MEETING NOTES

APRIL 7, 2021; 10 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Allison Rudalevige, Psomas
Brad Blood, Psomas
Carissa Shoemaker, ERM
David Hughes, Psomas
Edith Read, ERA
Finlay Anderson, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Steve Norton, Psomas

Agencies and Interested Stakeholders

Alyssa Marquez, CDFW
Blake Englehardt, USFS
Chad Mellison, USFWS
James "Jim" Erdman, CDFW
Nathan Sill, USFS

2. Compiled Action Items

-
- Psomas, USFWS, USFS, and CDFW have a separate call to discuss the best approach for approaching Endangered Species Act consultation for Yosemite toad, including appropriate survey methods, study area, existing models, and Biological Assessment needs.
 - The Relicensing Team will talk internally about our capability to calculate NDVI and USFS (Nathan Sill) will talk to the USFS remote sensing lab to see if it would be possible on their side.

3. Welcome, Introductions, Review of Notes and Other TWGs' Potential Studies

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and all participants via the chat window
 - Review of notes/comments from February
 - The Relicensing Team listed the potential studies / study requests that are being discussed in the other resource TWGs. SCE intends to make sure that on an ongoing basis, the subject matter experts for each TWG are communicating with each other so that TWGs can ensure that interdisciplinary objectives are covered.
 - Comment: Blake Englehardt, USFS
 - Thank you for sharing what is being discussed in other working groups. For these Aquatics studies, have there been discussions about study boundaries/areas? For the first two (Aquatic Habitat Assessment and Sediment

Characterization, and Operations Model / Peaking Flow Study), are they looking at anything downstream of Poole Powerhouse, or is everything above stream? Thomas Torres (USFS) shared some of the notes about this with me.

- Response: Relicensing Team - Not sure if we have resolved that yet. Project-affected reaches are areas above the powerhouse and within FERC boundary, we are still working in the Aquatics TWG to determine the study areas, clarify how the project operates, and the perception of cycling and intermittent flows. We are providing additional data and clarification from operations that could impact the scope of downstream studies. We would for now like to keep studies constrained to the FERC boundary.
- Comment: USFS
 - Which of the Aquatics studies did you say don't have a nexus?
 - Response: Relicensing Team - Peaking flow study is point of interest for the Mono Lake Committee and other stakeholders. No changes in project operations would occur, so we don't see the nexus. We are continuing to discuss this though. Other questionable nexus is the requested study to look at the impact of plant cycling on lower Lee Vining Creek. We need more data and an informed discussion.
- Comment: USFS
 - Will a study involving water quality parameters move forward?
 - Response: Relicensing Team – There are data gaps that need to be filled in, the key question for water quality is what the water boards will need for the 401 certifications. But we can't have so many restrictions that will prevent the project from existing as a hydro project.

4. Discussion of Resource Management Objectives / Potential Study Requests

- Relicensing team reviewed each potential study request received to date, and the elements considered in study requests but not included. Specific studies requested: **Yosemite Toad, Riparian Birds, Invasive Plants and unit on Didymo, Special Status Plants, and Riparian community.**
- Currently proposing: **Wildlife, Botanical, and Riparian Studies**
- Wildlife study objectives, rationale, and study area overview
 - Comment: CDFW
 - The Yosemite toad study shared previously looks to be in the FERC boundary at known locations. But the toads can travel pretty far. There could be a need to survey outside of the FERC boundary because of their movements.
 - Comment: CDFW – The nexus for studying toads outside of the FERC boundary may be impacts from recreation. What are the impacts of recreation on toad populations, collapsing their burrows, walking in their breeding areas, etc.
 - Response: Relicensing Team - There will need to be consultation with USFWS in the NEPA process to figure out RTE species, what ultimately will be necessary to check the consultation box?

- Response: USFWS – Section 7 consultation doesn’t have to do with NEPA, it is a separate process. It does require a Biological Assessment (BA), whether its concurrence or a consultation. Looking at direct and indirect impacts of the project, you may need to think bigger than what you’re used to. We do have some good modeling exercises that have been done looking at toad traveling distances away from breeding sites. We can help narrow the scope of direct and indirect impacts.
 - Response: Relicensing Team – The models would help us set some boundaries as far as study area/nexus goes. SCE will be FERC informal designee for ESA consultation after we file the PAD. We develop the record now so when FERC reaches out to the USFWS the record will be there.
 - Comment: USFWS – NEPA looks at everything, Section 7 is specific to listed species. The level of detail needed in Section 7 for effects is way more than what you would do in a NEPA analysis.
 - Comment: CDFW – In our proposed study for toads, there was a buffer suggested (100 ft vertical elevation) to include the upland habitat for burrows and overwintering. This could cover the areas outside of the FERC boundary that we are concerned about.
 - Comment: Relicensing Team – We would like to get together on another call and discuss the toad methods for BA scoping, study area, existing models, and BA scoping. This call should include at least Psomas, USFWS, USFS, and CDFW.
 - Botanical study objectives, rationale, and study area overview
 - Comment: CDFW
 - This is a FERC process question, if we did the botanical study, found that there are invasive plants, and the O&M vehicles are causing the spread, would the USFS address this in 4(e) conditions? Is that how it would proceed?
 - Response: Relicensing Team – As we go further into developing the studies and make PM&Es, we would identify the appropriate management plan for this to be addressed. The USFS may implement those as a 4(e) condition. However, that particular condition (cleaning O&M vehicles for seeds) is already a practice that SCE does when moving from site to site.
 - Comment: CDFW – So the goal would be to figure out where the invasives are, but we already have methods for dealing with the invasives.
 - Riparian community assessment objectives, rationale, and study area overview
 - The Relicensing Team added a description of aerial imagery flight lines that will occur this year as part of the ongoing studies for the current license.
 - Comment: USFS
 - Is the imagery taken specifically for riparian vegetation or the project overall?
 - Response: Relicensing Team – It was originally specific to riparian vegetation, as part of the program that the USFS set up for SCE to follow; however, there are additional aspects looked at like stream meanders/sinuosity.
 - Comment: USFS

- Is the dataset normalized difference vegetation index (NDVI) data or what is being collected?
 - NDVI = “A graphical indicator that can be used to analyze remote sensing measurements, often from a space platform, assessing whether or not the target being observed contains live green vegetation.” Healthy vegetation absorbs most of the visible light that hits it, and reflects a large portion of the near-infrared light. Unhealthy or sparse vegetation reflects more visible light and less near-infrared light.
- Response: Relicensing Team - With the Infrared band we would look at widths of the riparian vegetation and wet meadows, comparing it back to 2016 and 2011. The images are high-resolution but would not be able to identify individual species, it would compare overall conditions over time.
- Comment: Relicensing Team - How can we best use this data for project effects and make it useful for other purposes? As a reminder, when the current license was issued the FERC boundary went downstream further, some of the downstream photo areas are not in the project area anymore since the transmission line has been since taken out.
- Comment: USFS
 - If you’re comparing the data from current to 5-10 years past will you look at the current FERC boundary or the whole set of images all the way to Mono Lake?
 - Response: Relicensing Team – We would focus on the FERC boundary, not the whole way to Mono Lake, but can do it later if required. The scope of the analysis would be as appropriate to determine project effects. The study areas vary per individual studies and are still being discussed per study. Note that analysis will be the same because these images are part of a current study, which needs to be separated from the relicensing new proposed studies. But we can use this older data as a reference point.
 - Response: USFS – This makes sense to me, thank you for bringing it up as a resource to use for relicensing effort.
- Comment: CDFW
 - Looking back at NDVI, it seems like NDVIs should be calculated from the data we gather, would the consultants do that or would CDFW do that to effectively calculate vegetation between the years? And are all of the flights conducted within the same season/months?
 - Response: Relicensing Team – Flights occur during August each year. We have not been requested/required to analyze using NDVI.
 - Comment: USFS – We may want to have more discussion of NDVI, it would be extremely useful to have the calculation and comparison across the years. It’s not a resourcing program that the Inyo has a say in, but we do have a remote sensing lab that may be able to make the calculations for us. I will need to see if this is possible on our end. NDVI compares the vegetation’s “greenness” or health across years.
 - Response: Relicensing Team – Lets think about the project effects and what level of analysis is needed. We will talk internally about our capability to

calculate NDVI and USFS (Nathan) will talk to the remote sensing lab to see if it would be possible on their side.

5. Schedule & Next Steps

- Skipping a meeting in late April, next proposed meeting is proposed end of May.
- Reminder to get study plans and concerns to the relicensing team sooner than later so the fall season is less hectic for everyone.
- Additional action items are underlined above.

6. Upcoming TWG Meetings

Aquatics 4	May 24, 2021 9:30am
Terrestrial 4	May 26, 2021 10am
Cultural and Tribal 4	May 26, 2021 1:30pm
Recreation and Land Use 4	May 27, 2021 10am

Lee Vining, FERC Project No. 1388

TERRESTRIAL AND BOTANICAL TWG 4 MEETING NOTES MAY 26, 2021; 10 AM – 10:45 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Allison Rudalevige, Psomas
Brad Blood, Psomas
Carissa Shoemaker, ERM
Edith Read, ERA
Finlay Anderson, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Steve Norton, Psomas

Agencies and Interested Stakeholders

Alyssa Marquez, CDFW
Blake Englehardt, USFS
James “Jim” Erdman, CDFW
Thomas Torres, USFS

2. Welcome, Introductions, Review of Notes and Other TWGs’ Proposed Studies, Proposed Studies

- Matthew Woodhall provided a safety moment
- Introductions of team and all participants via the chat window
- Review of notes/comments and action items from April TWG
 - Recent agencies discussions regarding consultation on Yosemite toad included:
 - Questions to address in Yosemite toad study:
 - Do higher lake levels result in increased foot traffic through the occupied meadow
 - Is the water level of the meadow directly affected by the lower lake levels of Saddlebag
 - Normalized Difference Vegetation Index (NDVI) data is not likely applicable, so SCE is not planning to pursue it, no USFS update at this time
- The Relicensing Team discussed the proposed studies that are being discussed in the other resource TWGs. SCE intends to make sure that on an ongoing basis, the subject matter experts for each TWG are communicating with each other so that TWGs can ensure that interdisciplinary objectives are covered.
 - In Aquatics TWG, the Hydro Operations Model study has a new objective to understand the intra-day variation in flows and how these may affect specific resources.
 - In Recreation, the Visual Quality Assessment is a newly proposed study.
- Proposed Wildlife Study

- Proposing to extend the survey area for wildlife to assess willow flycatcher nesting habitat between Poole Powerhouse and LADWP diversion.
- Pedestrian survey
- Comment: Alyssa Marquez CDFW
 - For the ground-truthing of vegetation, how will you classify vegetation, by height or by species type?
 - Response: Relicensing Team – Agreed that the internal structure is what matters, we do want to get eyes on the vegetation to assess the sub-structure height and density which can't be observed remotely.
- Comment: James Erdman CDFW
 - What about including Tioga Lake for the Yosemite toad study area, is that included or only Saddlebag Lake?
 - Response: Relicensing Team – Yes, we are still internally discussing which portions of Tioga Lake will be included in the proposed study plan.
- Focused Yosemite toad survey
- Yosemite toad habitat-recreation interaction survey would assess pedestrian access of the meadow near Saddlebag Lake to see if there are impacts occurring from foot traffic.
- Proposed Botanical Study
 - Assess rare, threatened, and endangered (RTE) species, e.g., whitebark pine and other special-status species
 - Ground-truthing the existing USFS vegetation layers
 - Riparian monitoring study results would be incorporated
 - Invasive species survey
 - Comment: Blake Englehardt USFS
 - I agree that these botanical methods sound good.

3. Schedule & Next Steps

- Study plan outlines will be distributed with the PAD.
- Joint agency meeting (JAM) and receipt of comments on final study plans by end of September and beginning of October.
- Comment: James Erdman CDFW
 - I visited Saddlebag Lake in mid-May and it was still totally covered in snow. Saddlebag and Tioga Lake levels were very low. Ellery Lake was totally full and ice free. The Bishop area has much less snow.
- No additional TWG meetings scheduled at this time, TBD as needed.

Lee Vining, FERC Project No. 1388

CULTURAL AND TRIBAL RESOURCES TWG 1 MEETING NOTES

January 27, 2021; 1:30 PM – 2:40 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Audry Williams, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Lynn Compas, HRA
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Shelly Davis-King, DKA

Agencies, Tribes, and Interested

Stakeholders

Ashley Blythe-Haverstock, USFS
Charlotte Lange, Mono Lake Kutzadikaa
Tribe (via phone)
Christina McDonald, North Fork Rancheria
of Mono Indians of California
Dean Tonenna, Mono Lake Kutzadikaa Tribe
Monique Sanchez, USFS

2. Compiled Action Items

-
- SCE (Audry Williams) will gather previous consultation letters to confirm what communication there was in the past.
 - The relicensing team will put the previous Environmental Assessment (EA) and other relevant license documents on the Project website.
 - The relicensing team will inform the Cultural/Tribal group about other TWG items.
 - The relicensing team can circulate a team contact list.
 - The Relicensing Team will distribute a link to the Bishop Creek Study Plan and provide an updated study plan template for TWG members to fill out within two weeks of receipt.

3. Welcome and Introductions

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and all participants
 - Review of notes/comments from November

4. Relicensing Process

-
- SCE provided a Lee Vining Project overview
 - The Relicensing Team provided a FERC relicensing overview

5. Summary of Existing Resources

- SCE summarized existing Cultural and Tribal resources in the Project vicinity
 - Relicensing Team mentioned there are updates to Eastern Information Center Record Search that we will be able to access soon; data regarding sites and studies will be incorporated into the PAD.

6. Discussion of Resource Management Objectives / Potential Study Requests

- The Relicensing Team asked about resource management objectives: What issues would you like us to focus on? This is meant to be a collaborative group, we want to make sure we address the issues important to you, participants.
- Comment: Mono Lake Kutzadikaa Tribe -
 - Tribal people can provide and have interest in cultural resources, but are often limited in the cultural arena. Tribes are mostly interested in natural resources (e.g., plants, animals, water). In the past have been boxed into cultural issues and have been lumped into the general public for other natural resources. Public interest does often satisfy the tribal interest, because often there is more. We do not want to repeat consultation efforts where tribal has been boxed into other categories.
 - Have there been previous studies / previous NEPA consultation done on this project? Was tribal consultation done for previous NEPA? It seems that this will be the first opportunity for tribes to consult on this project. I do not think they were previously engaged or involved in the project as it exists. Tribal input has not been taken into account yet.
 - Relicensing Team – this is exactly why FERC has two separate areas, cultural and tribal. Analysis is needed to communicate your interests and concerns. You will have an opportunity all the way through the Relicensing Process to provide your comments and interests.
 - SCE – Not much consultation happened on this Project the first time around, in the late 1980s. SCE will gather the previous consultation letters to confirm if there was any consultation in the past.
 - Relicensing Team – From a process standpoint, interconnectedness of all of the work groups (TWG) is important. We encourage participants to join more than one TWG if you have time. We need to make sure there is cross-referencing between the groups so we all know what is important to each other. As far as previous NEPA goes, we can put the previous Environmental Assessment (EA) on the Project website. Presented a brief review of what information is currently provided on the website. We will remember to check in with Cultural/Tribal group to inform about what the other TWGs are looking at.
 - Several folks present here are in the other TWGs as well. You are welcome to join in several or all. We can report back to this group on progress of other TWGs. We do not have past relicensing documents up on our website, but do have a lot of information that we have compiled so far (PAD references, draft tables and figures, etc.).

- Mono Lake Kutzadikaa Tribe – I agree that synthesis from other groups is important. We want to get this off on the right foot and we do not have time to attend all of those other meetings.
- The Relicensing Team discussed the study request process. We are looking for study goals and objectives, management goals/objectives relevant to public interest. However, what we are studying needs a direct connection to the project. We can circulate a contact list to everyone.
- Comment: Mono Lake Kutzadikaa Tribe – From a tribal perspective, we lose our heritage project by project. It is important to have cumulative effects as context for this project because of all of the existing projects. We need to set the realization of how this can affect tribal people. Most would say things are ‘beyond the scope of the project,’ but it is a cumulative impact to our people, project by project by project. Think about this for future conversations, not now.

7. Schedule & Next Steps

- Final comments on goals and objectives as soon as possible, we can start an outline for the next meeting for scope of studies.
- Reviewed the proposed upcoming meeting dates.
- The next Cultural/Tribal TWG will be 1.5 hours in length
- Draft meeting notes to be circulated for review
- Meeting invitations for February and March to be sent
- Additional action items are underlined above

8. Upcoming TWG Meetings

Aquatics 2	February 22, 2021 10am
Terrestrial 2	February 24, 2021 10am
Cultural and Tribal 2	February 24, 2021 1:30pm
Recreation and Land Use 2	February 25, 2021 10am
Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388
CULTURAL AND TRIBAL RESOURCES TWG 2 MEETING NOTES
FEBRUARY 24, 2021; 1:30 PM – 3:00 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Audry Williams, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Lynn Compas, HRA
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Shelly Davis-King, DKA

Agencies, Tribes, and Interested Stakeholders

Ashley Blythe-Haverstock, USFS
Christina McDonald, North Fork Rancheria of Mono Indians of California
Monique Sanchez, USFS
Monty Bengochia, Bishop Paiute Tribe
Ron Goode, North Fork Mono Tribe
Sean Scruggs, Fort Independence Indian Community of Paiute Indians

2. Compiled Action Items for Relicensing Team

- The Relicensing Team will do better about having communications come from one person – Audry Williams is to be lead contact hereafter.
- Sent a copy of the presentation to the Fort Independence Indian Community of Paiute Indians.
- Research the archaeological dates on artifacts in this area in the Eastern Information Center data, provide to North Fork Mono Tribe if found in the data.
- Develop a timeline on how/when to share the draft PAD with Tribes, as Tuolumne Band of Me-Wuk Indians has requested a copy of the Tribal Resources PAD section.

3. Welcome and Introductions

- Audry Williams introduced the meeting and addressed the confusion that arose from previous project email communications over the past month
- Matthew Woodhall provided a Safety moment
- Introductions of team and all participants
- Shelly Davis-King emphasized that Bishop Creek and Lee Vining Creek studies are completely different projects, with different studies for each

4. Relicensing Process

- SCE provided a Lee Vining Project overview
- The Relicensing Team provided a FERC relicensing overview
- Review of notes/comments from January TWG
- Comment: Christina McDonald, North Fork Rancheria of Mono Indians of California
 - Do you have a list of references created for Cultural/Tribal so far?

- Response: Relicensing team - A list of references has been shared on the Lee Vining website (sce.com/leevining), the “Draft PAD References Cited”. This list was last updated in November but will continue to be updated as we develop the PAD.
- Comment: Ron Goode, North Fork Mono Tribe
 - Why are you starting the relicensing process so early? This is 7 years ahead. Have you been on a long-range term program with 5-year studies, what is that timeline? You’re indicating that you’ve never done any studies, you must have had studies 30 years ago and if there is a long range plan with 5-year studies we should know what needs to be updated and get into what we haven’t been studying.
 - Response: Relicensing team – Yes, there have been previous studies. Other resource areas may have an every 5-year requirement, but the Historic Properties Management Plan (HPMP) does not currently have a 5-year requirement. The HPMP was primarily for transmission line resources. The project footprint is small and mostly sloped. There is only one site within the project boundary, so there wasn’t a requirement for a cultural resource study every 5 years.
 - Response: Relicensing team – There has never been a Tribal resources study, or a Native American ethnography for this project; we will be starting from scratch. Need Tribal input because of this.
 - Response: Relicensing team – That is a good question regarding the timing. For the regulatory process, the PAD needs to be filed 5 to 5.5 years prior so we do start having these conversations 7 years out, like we are doing here.
- Comment: Ron Goode, North Fork Mono Tribe
 - What is your actual FERC boundary buffer distance – 50 feet, 150 feet?
 - Response: Relicensing team – The buffer around project features and creeks varies from 50 to 100 feet.
 - Response: Relicensing team – The proposed APE is the FERC boundary. If in the studies find an effect happening outside of the FERC Boundary because of project operations, the proposed APE boundary can be modified. The study area is a 0.5-mile radius for cultural and a 5-mile radius for Tribal, from the proposed APE/FERC boundary.
 - Response: Relicensing team – There was a survey 30 years ago during the last relicensing, but we are unsure about the thoroughness of the survey. The National Historic Preservation Act existed at the time of the last relicensing. We have only found reference to Tribal outreach from the previous relicensing, no specific records. The APE will be resurveyed.
- Comment: Fort Independence Indian Community of Paiute Indians
 - Sean Scruggs I’m working with SCE on an Owens Valley project. Tribal input was not used and lots of agencies don’t know how to act in these situations. That is why it is fortunate that the THPOs exist now and that agencies talk to us now. We need to have the Tribal information included.

5. Other TWGs’ Potential Studies

- The relicensing team listed the potential studies / study requests that are being discussed in the other resource TWGs
- Comment: Ron Goode, North Fork Mono Tribe

- Are there plant gathering areas for Tribes in this area? These are not typically included in a botanical study.
- Response: Relicensing team - Yes, there are gathering areas and they would be included in the Cultural/Tribal studies. Ethnobotanical resources are discussed in the tribal resources section unless the botanists reach out to the tribes to elicit information.
- Response: Relicensing team – we've been working with some folks who have gathering areas in the project area. An ethnobotanical study will occur and we will look at these areas. We will make sure then need to address if the gathering areas are affected by vegetation management, trail maintenance, or other project activities. We can ensure that those areas are protected-- that's why it's critical your information makes it to us so we can include it. An ethnozoological analysis may be needed as well.
- Comment: Ron Goode, North Fork Mono Tribe
 - I appreciate the gathering areas being included in the study. We will also want to know when and where SCE uses herbicides, especially in the APE. It's important that you try to develop an ethnobotanical list of what the Indian community is interested in giving to the scientists.
 - Response: Relicensing team – We have a copy of the Kerckhoff ethnobotany document and we could use that as a model/template.

6. Summary of Existing Resources

- The Relicensing team summarized existing Cultural and Tribal resources in the Project vicinity

7. Discussion of Resource Management Objectives / Potential Study Requests

- The relicensing team summarized the currently planned studies
- The relicensing team asked if everyone is comfortable with the response provided regarding the issues and confusion that arose earlier in the month; no stakeholders responded
- Comment: Fort Independence Indian Community of Paiute Indians requested a copy of the presentation as he attended via the phone.
- Comment: Ron Goode, North Fork Mono Tribe
 - What is the archaeological date on artifacts in this area? Wondering specifically about the arrowheads photo in the presentation.
 - Response: Relicensing team – There are lithic scatters recorded, but I don't know if there were diagnostic artifacts. The arrowheads photo is just a general picture, not specific to this project. We are still going through Eastern Information Center data, if I find this information, I will let you know.
- Comment: Tuolumne Band of Me-Wuk Indians (via an in-person meeting presented by the relicensing team)
 - The Tribe, having participated in many hydroelectric relicensings are aware that the Tribal and Cultural resources portion of the Preliminary Application Document (PAD) has likely been prepared and they would like to see a copy before it goes out to the general public. Why hasn't this been shared since the Tribal document is supposed to discuss what the Tribes think? They would like to know what work has been done, and what is being discussed now.

- Response: Relicensing team - We should be able to do that as time allows, we will develop a timeline on how to do that.
- Comment: Tuolumne Band of Me-Wuk Indians (via and in person meeting presented by the relicensing team)
 - The Tribe is unaware of any ethnography that has been prepared for the immediate area and believes this should be in the Study Plan. They asked if this will be part of the project, and I assured them that indeed there would be an ethnohistory prepared and ethnographic interviews conducted. They shared that they had worked and consulted with Yosemite National Park on several projects in Tuolumne Meadows and know about the trails and resource areas there. This project is right next door and we have Tribal members whose grandparents and great grandparents came from Mono Lake.
- Comment: Tuolumne Band of Me-Wuk Indians (via in person meeting presented by the relicensing team)
 - The Tribe is aware of the Emma Lou Davis field notes, and requests that they be investigated and documented when the field work begins. These documents have never been published or used, and since this is the first time that an ethnographic overview will be prepared, it is a perfect time for looking into these.
- Comment: Monty Bengochia, Bishop Paiute Tribe requested copies of any Bishop Creek Reports
 - The relicensing team will follow up with the Bishop Paiute Tribe. An interim report has been prepared and had already been sent. The team will confirm receipt.

8. Schedule & Next Steps

- Reviewed the proposed upcoming meeting date
- Draft meeting notes to be circulated for review
- Additional action items are underlined above

9. Upcoming TWG Meetings

Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388

CULTURAL AND TRIBAL RESOURCES TWG 3 MEETING NOTES**MARCH 31, 2021; 1:30 PM – 3:00 PM PDT**

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Audry Williams, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Lynn Compas, HRA
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Shelly Davis-King, DKA

Agencies, Tribes, and Interested Stakeholders

Monique Sanchez, USFS
Monty Bengochia, Bishop Paiute Tribe
Raymond Andrews, Mono Lake Kutzadikaa Indian
Community Cultural Preservation Association
Tara Fouch-Moore, Southern Sierra Miwuk Nation
Bill Tucker, Southern Sierra Miwuk Nation

2. Compiled Action Items for Relicensing Team

- The Relicensing Team will invite Raymond Andrews to the other three TWG meetings and send him a copy of the March 31 TWG PowerPoint presentation.
- The Relicensing Team will ensure that mining/mine shafts in the Project Area are discussed in the PAD.

3. Welcome and Introductions

- The Relicensing Team introduced the meeting, presented a safety moment, and introduced themselves

4. Relicensing Process, Project Overview, Other TWGs Potential Studies

- SCE provided a Lee Vining Project overview
- Review of notes/comments from February TWG
- Discuss the 30-day review period for the draft PAD sections (April 16 - May 16)
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association
 - Concerned with public having information on cultural and gathering site locations. There has been a lot of desecration of gathering and other cultural sites. Concerned about the public receiving the PAD.
 - Response: Relicensing Team - The publicly available PAD documents does not include maps of resource locations. Those are included in a confidential appendix of the PAD so the general public cannot access it. We also try and make the locations described in the PAD vague so they are hard(er) for the public to find. Please review the PAD ahead of

time and give us feedback if a description is too specific. The locations of important plant species will hopefully be identified in the study, but the locations will not be described in detail in PAD, they'll be in confidential portions of the study report.

- Comment: Monique Sanchez, USFS
 - Will draft portions of PAD shared with other groups, like Aquatics to the Aquatics TWG?
 - Response: Relicensing Team - We don't intend to share all PAD sections with TWGs, only Cultural and Tribal for now. Note that there is some information already available online. The Cultural and Tribal sections are different because of the personal connection that Tribes have with the resources discussed. These two PAD sections will be shared with tribes and the USFS representative only.
- Comment: Bill Tucker, Southern Sierra Miwuk Nation
 - Have you looked at species like bighorn sheep and reptiles? Where is the FERC boundary line - between the counties or does it go down to Yosemite NP and Tioga Pass?
 - Response: Relicensing Team - The other technical working groups are doing studies for other species, studies for wildlife for example. Bighorn sheep will definitely be assessed. The Project doesn't go above Tioga Lake, and is not actually within Yosemite NP and doesn't go up to the Tuolumne County line. Biological species of concern would be addressed in the Tribal Resources study in addition to the other technical groups.
 - The Relicensing Team reviewed the APE and Study Areas and the proximity to Yosemite. The 5-mile Tribal Resources buffer around the APE goes into Yosemite NP.
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association
 - This project includes "the blood of mother earth". There is a lot of water coming from surrounding area into this project. Does SCE have an agreement with the state regarding keeping Mono Lake at a certain level? Our gathering is affected when water levels are low.
 - Response: Relicensing Team - All of our hydro systems have an agreement with LADWP, we put all of the water back into the system. All of the water makes it down into Mono Lake, except for the amount that remains in the reservoirs. For Lee Vining and Lundy as well, SCE has FERC requirements around how and when water is released between the project's reservoirs. They can fluctuate at certain times of the year for recreation, etc. There is also an annual consultation with USFS that changes it a bit each year. This information will all be presented in the PAD.
 - Comment: Raymond Andrews - Is there an agreement with LADWP with the water that goes into the tunnel to LA?
 - Response: Relicensing Team - No, we don't have anything to do with putting water into the tunnel. Once the water leaves our project area it is out of our control.
- The Relicensing Team listed the potential studies / study requests that are being discussed in the other resource TWGs
- The Relicensing Team reviewed the goal of study plans
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association
 - How about the migratory bird act, I know there are eagles there. It's not on your list of regulations.
 - Response: Relicensing Team - Yes, we will be complying with MBTA and BGEPA as well, this list was just an example of the main ones. Also raptor surveys will be conducted.

- The Relicensing Team reviewed the FERC process with a relicensing overview

5. Discussion of Study Plans

- The Relicensing Team reviewed the Cultural Resources and Tribal Resources study plans
- Comment: Raymond Andrews, Mono Lake Kutzadika Indian Community Cultural Preservation Association
 - I'm wondering about archaeological surveys and permitting. Sometimes we don't make agreements with agencies for gathering sites; for example, we didn't want to do one with NPS because they wanted sensitive info that we didn't think they needed. I'm not interested in gathering permits. We sometimes don't want to divulge the information to the agencies because of the way they use the data. Is there going to be a Tribal monitor on this project during construction?
 - Response: Relicensing Team - Since this project is already built there is no construction, so no Tribal monitor would be needed. If there is a requirement in the HPMP, then yes. For surveys we would use Tribal participation.
 - Comment: Raymond Andrews - For example, if there was a flood then there would be construction to fix any damage, and you'd use a tribal monitor.
 - Response: Relicensing Team - During the Tribal resources study, we hope to take numerous people from Tribes out to the project area and identify significant locations in the field. I'd welcome you walking along with me anywhere out there to discuss the project.
- Comment: Bill Tucker, Southern Sierra Miwuk Nation
 - For some water history of the area, the Tioga Pass area water runs to LA and the water in Yosemite Valley runs all the way to San Francisco.

6. Schedule & Next Steps

- The Relicensing Team reviewed the proposed upcoming meeting date and remainder of the relicensing schedule
- Comment: Monique Sanchez, USFS
 - The November 13, 2021 date for filing proposed study plans is at the peak of the fire season. We are trying to reach agreement on some of our requests/issues, hoping to reach agreements before August. Is everything subject to change up until the November 13 date?
 - Response: Relicensing Team - This is a good reminder that the more we can consult now is better and easier for our deadlines. However, the deadlines are driven by statute. In the PAD, we won't have complete study plans but they will be substantive. If what we propose in the PAD works for you, then you won't need to worry about requesting any additional studies and your next interaction could be in January 2022. But you'll want any other comments on record by November 13. The more we can do now, the less we have to do later.

- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association
 - Regarding the September 2021 consultation that you have listed, this is not consultation, this is a meeting. Are you going to have individual consultations too?
 - Response: Relicensing Team - SCE is conducting early outreach to Tribes and other stakeholders to provide FERC with background information. FERC will send the Tribes a letter to begin formal consultation, and may then designate SCE to conduct consultation on its behalf. You will have an opportunity to consult throughout the life of the project, either with FERC directly or with SCE and its contractors.
 - Comment: Raymond Andrews - That's how we have done it in the past. You also have THPOs in there, and they don't do consultation. A Tribal consultant does the consultation, they meet individually with the Tribes.
 - Response: Relicensing Team - Consultation can be via letter, in-person, on the phone, in emails, etc. All of the background info on the project is sent out and there is an opportunity to participate in consultation. FERC's consultation goal is to make sure they have addressed all issues that may arise. This project team is looking to initiate communication with the Tribes early so we can make sure your interests are identified and communicated on behalf of SCE to FERC. Sometimes FERC representatives in Washington DC will participate in these TWGs, but sometimes they don't. We want to make sure we are communicating with the right people.
- Comment: Bill Tucker, Southern Sierra Miwuk Nation
 - Have you checked into mine shafts area at top of Tioga Pass? There are several mine shafts that drain back into Lee Vining Creek that are 60-80 feet deep. There is ranger station right above it.
 - Response: Relicensing Team - Mining operations and resulting water flow in the vicinity would typically be included in the PAD discussion.
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association
 - Can we attend the recreation meeting? And can I get a copy of this presentation? I'd like to be added to all the other TWGs.
 - Response: Relicensing Team - Yes, you can, we can add you to the TWG invite lists and I can get you a copy of the presentation.
- Draft meeting notes to be circulated for review
- Additional action items are underlined above

7. Upcoming TWG Meetings

Aquatics 4	May 24, 2021 9:30am
Terrestrial 4	May 26, 2021 10am
Cultural and Tribal 4	May 26, 2021 1:30pm
Recreation and Land Use 4	May 27, 2021 10am

Lee Vining, FERC Project No. 1388

CULTURAL AND TRIBAL RESOURCES TWG 4 MEETING NOTES MAY 26, 2021; 1:30 PM – 3:00 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Audry Williams, SCE
Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Lynn Compas, HRA
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt
Shelly Davis-King, DKA

Agencies, Tribes, and Interested Stakeholders

Sheila Irons, USFS
Ron Goode, North Fork Mono Tribe
Raymond Andrews, Mono Lake Kutzadikaa Indian
Community Cultural Preservation Association
Monty Bengochia, Bishop Paiute Tribe

2. Compiled Action Items for Relicensing Team

- Connect with Ron Goode to get copies of his Water Stories
- Keep the group informed of Studies as they progress, including other resources' Study Plans

3. Welcome and Introductions

- The Relicensing Team introduced the meeting, presented a safety moment
- TWG participants introduced themselves

4. Relicensing Process, Project Overview

- SCE provided a Lee Vining Project overview
- Review of notes/comments and action items from March TWG
- No comments have been received on the Tribal or CUL 1 Preliminary Application Document (PAD) to date, more opportunities for comment will be presented throughout the relicensing process.

5. Discussion of Proposed Study Plans

- The Relicensing Team reviewed the Cultural Resource and Tribal Resource Study Plans
- Comment: Ron Goode, North Fork Mono Tribe –
 - Emphasized the difference between cultural resources the way the team is using it and cultural resources the way the Tribes use it. Cultural resources to the tribes are all things—water, rocks, air, birds, plants, etc. He wants us to be clear on what we are meaning. Tribal resources are more than archaeological sites that might be eligible for listing in the National Register. Wanted clarity on how cultural resources and Tribal



- values will be analyzed separately. Is glad that the ethnographic study area extends 5 miles around the Project.
- Response: Shelly Davis-King, Relicensing Team – Cultural and Tribal resources are different, not all Tribal resources are eligible for the National Register, e.g., an elderberry harvest location related to an individual gatherer might not be eligible. We are asking the Tribes to help us understand what is significant to them, and we will include those resources in our Tribal Resource Study Plan implementation. We work closely with HRA who has a great understanding of what those more recent resources might be.
 - Comment Ron Goode, North Fork Mono Tribe – We don't want to get lost in the two verbiages (cultural and Tribal). For example, on another project we made them a vegetation species list and it was not included/assessed in the Botanical study report. We felt like we weren't listened to.
 - Response: Shelly Davis-King, Relicensing Team – The ethnobotanical lists you have developed in the 70s and the more recent one were included in the tribal resources report for that project, and the biological team had access to that list. We will conduct a similar survey for this Project.
 - Response: Audry Williams, Relicensing Team – We understand that the resources are connected and we will assess them where we need to.
 - Response: Lynn Compas, Relicensing Team – Sometimes archeological sites or buildings may not meet the criteria for the National Register but still have Tribal values, and that is part of the goal here to recognize those sites.
 - Response: Shelly Davis-King, Relicensing Team – HRA, a Tribal representative, and I go into the field together and discuss potential Tribal resource areas. We identify as best as we can what those values are.
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association –
 - When this project was constructed, there was no consultation with the Tribes, except for a report that was written after construction. A lot of the information my elders passed on wasn't recorded. For example, before there was a road up Tioga Pass the Kutzadikaa used a trail and gathered up there near Poole Powerhouse. We know there are sites in there. There is an importance of certain plants we are gathering because they didn't grow in any other place. So, we have to gather there.
 - Response: Audry Williams, Relicensing Team – Missing information like this is what we want to gather from you for the Tribal Resources Study Plan. We want to include the information you know and include it in the Study.
 - Comment: Ron Goode, North Fork Mono Tribe –
 - For Raymond and Monty, we have been assessing trails on our side of the Sierra recently. It would be beneficial to look at trails on the east side and those that go over to the west side to see where the trading was.
 - Response: Audry Williams, Relicensing Team – Agreed that a trail analysis, combined with other projects in the area, would be great to map comprehensively.
 - Response: Shelly Davis-King, Relicensing Team – In the PAD, there is a map of trails in the Project Study Area, where the Kutzadikaa and others have identified many of those go into this Project area or nearby. There is already some knowledge/documentation of the trails. I hope that this will be a major portion of the Tribal Resources Study in

addition to plants and animals. *[Showed the PAD Figure 5.12-3 to the group]*. Trails are an important feature of this Tribal Resources Study and we know there are a lot more to add in.

- Comment: Ron Goode, North Fork Mono Tribe – I'm glad you are recording trails, we want that to continue. I call it the Mono Trail System. There's a "stem" on the western side, but there may be one on the eastern side too. I just heard of a deer migration study where deer were following Indian trails.
- Comment: Monty Bengochia, Bishop Paiute Tribe – I'd like to assist in any way with the trails research. I believe that the indigenous trails and commerce system need to be revived. The mountain country is very therapeutic, it is our ancestral homeland. I just wanted to say I like this discussion. And I have been working with Kathy Bancroft up there –she was related to Sugar Pine and Harney Jefferson and her brother ran the pack train-- and we really need to reconnect our ancestral homeland and make it come together.
- Response: Audry Williams, Relicensing Team – With the several relicensing projects in the area, we should be able to amass a lot of really good data, and I'm also looking forward to it.
- Comment: Ron Goode, North Fork Mono Tribe –
 - We (Ron, Monty, and Raymond) have a lot of good stories and information about our homeland, like where we were and what was going on in those areas.
 - Comment: Shelly Davis-King, Relicensing Team – It would be great if you could share your Water Story pamphlets/booklets with the relicensing team, especially the water resources team.
 - Response: Ron Goode, North Fork Mono Tribe – I'm willing to share some.
 - Response: Audry Williams, Relicensing Team – I will work with you, Ron, and figure out how we can get copies to our team.
- Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association –
 - Will there be Tribal monitors?
 - Response: Relicensing Team – Tribal monitors will be invited to the cultural resources field survey.

6. Proposed Studies for Other Resource Areas

- Relicensing team summarized proposed Studies for the other resource areas.
- Relicensing team will continue to keep this TWG's participants aware of studies/issues raised in other TWG resource areas.
- Comment: Ron Goode, North Fork Mono Tribe –
 - Are there any mussels on that side of the Sierra?
 - Response: Finlay Anderson, Relicensing Team – No, my understanding is that the water chemistry is not conducive for mussels.
- Comment: Ron Goode, North Fork Mono Tribe –
 - Does water from Lee Vining Creek affect Mono Lake, does it go there?
 - Response: Finlay Anderson, Relicensing Team – Yes, Lee Vining flows into Mono Lake. The Los Angeles Department of Water and Power (LADWP) diversion is about 5 miles downstream of Poole Powerhouse. SCE releases water from the

- Powerhouse into Lee Vining Creek and then LADWP diverts a portion of it to LA, and the rest goes down into Mono Lake.
- Ron Goode-- From a native view, if we don't go all the way down the stream we aren't doing right by our resources. Especially affects rehabilitation and restoration even if it isn't in the FERC boundary.
 - Comment: Ron Goode, North Fork Mono Tribe –
 - Expressed concerns about shrimp (kutsavi) gathering areas and how hydro projects can affect them. You need to assess the whole stream and ecological connections between species to understand the system (e.g., there are no eagles at another project because there are no fish, there are no fish because of the hydro project not releasing enough water).
 - Response: Finlay Anderson, Relicensing Team – The LADWP Settlement Agreement would be a good resource for you to see, as it describes how much water LADWP has to release into Lee Vining Creek. I realize this may not be a complete answer to your question, so we will keep having this conversation.
 - Comment: Ron Goode, North Fork Mono Tribe –
 - Native Americans understand what we had before Europeans came and before the hydropower dams.
 - Response: Finlay Anderson, Relicensing Team – We will revisit the PAD and make sure the resources are comprehensive about this.
 - Comment: Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association –
 - Lakes in the area are being affected by water quality and quantity (e.g., Mono Lake and Owens Lake). We haven't gathered at Mono Lake for many years. We are losing part of our gathering process so we are trying to bring it back. The agencies and water boards aren't concerned with the whole streams to the lakes, only the project areas.
 - Comment: Ron Goode, North Fork Mono Tribe –
 - Mussels that we used to gather are almost extinct. We haven't gathered them in a long time. We've been working with SCE and PG&E. The environmental changes is related to the hydro projects. The agencies aren't looking at things that are cultural. Harvesting and access to cultural resources is important. It's important that we get involved with the other resources and follow what they are doing. Our science has been around for thousands of years and we understand what is going on.

7. Schedule and Next Steps

- Study Plan outlines will be distributed as early as next week, but these are not set in stone. There is a lot of opportunity down the road to refine the objectives and scope.
- Hopefully will have an in-person meeting at the end of September and a site visit, then there are more opportunities to comment on the Study Plans. Then we take all the comments and incorporate them into the Studies or put on record why we aren't including some parts of the requests.
- When the PAD/NOI is filed, FERC then has 30 days to initiate formal tribal consultation.

8. Upcoming TWG Meetings

None scheduled at this time, TBD as needed.

Lee Vining, FERC Project No. 1388

RECREATION AND LAND USE TWG 1 MEETING NOTES

January 28, 2021; 10 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Matthew Harper, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt

Agencies and Interested Stakeholders

Adam Barnett, USFS
Bartshe Miller, Mono Lake Committee (MLC)
Christina McDonald, North Fork Rancheria of Mono Indians of California
Katie Goodwin, Access Fund
Lawson Reif, USFS
Nick Buckmaster, CDFW
Nora Gamino, USFS
Ron Goode, North Fork Mono Tribe
Sheila Irons, USFS
Stephen Bowes, NPS

2. Compiled Action Items

- The relicensing team will put the current license and other relevant amendments up on the project website for reference <https://www.sce.com/regulatory/hydro-licensing/leevining>
- Relicensing team can direct you to USFS trail data.
- Follow up with cultural team on how historic and who developed the trails within the Project area.
- Access Fund (Katie Goodwin) can provide information on how people are accessing the ice climbing areas in the project vicinity, she will research and get back to us.
- Relicensing team can provide the current project boundary to everyone.
- Relicensing team will capture the concern of impacts from recreation on archaeological, cultural, and tribal sites. We will find the right place to address this.
- The Relicensing Team will distribute a link to the Bishop Creek Study Plan and an updated study plan template for TWG members to fill out within 2 weeks of receipt.

3. Welcome and Introductions

- Matthew Woodhall provided a Safety moment
- Introductions of team and all participants
- Review of notes/comments from November – good to be finalized and posted to website

4. Relicensing Process

- The Relicensing Team provided a FERC relicensing overview

5. Discussion of Resource Management Objectives / Potential Study Requests

- What issues would you like us to focus on?
- Comment: USFS – We are focused on developed recreation sites to bring them up to current standards for accessibility, sustainability, and resource protection. What is the project boundary? Seems like many recreation sites are outside of the project boundary but do exist because they are associated with the project.
 - Relicensing Team – It's sort of a fine art of determining which recreation sites are there because of the Project or just because it's a beautiful location.
 - Relicensing Team – According to FERC, a project-induced site is one that has been included in the license for mitigation and is considered project-required. These creeks were there prior, so the draw for recreation could have been there prior to the project. No developed recreation sites are associated with the current license. However, minimum flows and fish stocking are included in the license. It would be reasonable to consider that some of the recreation here is project-induced.
- Comment: NPS – It would be useful straight out of the gate, what sites do we all feel are project-related and should be included in potential future studies. Should be a top priority, not decided today but is essential.
 - Relicensing Team – A similar conversation/process happened with Bishop Creek, and we do have a similar thought process going here with Lee Vining. The lakes were dammed up and created by the Project.
 - SCE – These evaluations have occurred in the past to develop the current license. Those before us made some decisions on what recreation sites would be included in the license. We do have fish stocking included but no recreation facilities currently in the license. Because this area is also the entrance to Yosemite NP this area would be used that way regardless even if the Project wasn't here. If you can provide significant nexus to the Project we can analyze it accordingly.
- Comment: USFS – Where can we find the document showing that recreation sites were deemed not associated with the Project?
 - Relicensing Team – We can reference you back to the 90s licensing documents, previous assessments, EA, etc. However, times change and part of what we are doing is updating the license with current environmental standards, so it may be a question we pursue. We can put current license up on the website for reference. In our notes we can cross reference where to find the license and this information.
- Comment: North Fork Rancheria of Mono Indians of California - Is there a trail inventory within the FERC boundary? I'm just thinking of any trail impacts in areas of sensitive species locations. Designated trails and undesignated.
 - Relicensing Team – We would be developing that list. The dashed lines on this map show trails within the vicinity. Though this map is not entirely exhaustive. There are

about 8 trailheads on this figure that lead off project into the wilderness. Some do cross into the project boundary. None are specifically tied to the license. There is lots of fishing along Lee Vining Creek; informal foot trails are present for fishing access.

- Relicensing Team – Trails impacts' on sensitive species was mentioned yesterday in the Terrestrial TWG. We will be analyzing potential indirect effects of the recreation and project on these sensitive species. It is sort of an interpretive question about why that trail exists, but we will figure out a way to assess those access point and see how they intersect with our resource questions.
- North Fork Rancheria of Mono Indians of California - I missed that conversation yesterday, sounds like it will be addressed. Thank you. Perhaps a GIS layer showing trails and species polygons would be good to see.
- Relicensing Team – It should be noted that we will be working on sharing information between the TWGs so you all know what has been discussed at the other TWGs.
- The PAD will assess sensitive species in the area in light of where the current trails are, dispersed foot trails won't necessarily be mapped though. We could point you to that data from the USFS, if you'd like. [USFS trail data can be accessed here.](#)
- Comment: North Fork Mono Tribe – I was invited to the Cultural-Tribal TWG but I was not available to attend. Are these recreation trails, forest service made, rancher made, Native American made? How historic are these trails?
 - Relicensing Team - I don't think we know this at the moment, but our cultural team might. We will follow up with them and get back to you.
- Comment: MLC – I'm interested in the opportunities regarding the pullouts: one right at Ellery Lake and one at Tioga overlook. Are those in the project area? Are there opportunities to organize/clarify traffic there, manage people, and include interpretive displays since the pullouts attract people to observe the scenery? What about adding restrooms?
 - Relicensing Team – Some or all of the pullouts are within the project boundary, but none are managed by SCE. We will take a look at the use around the reservoirs. We will look at existing use and needs associated with the project. In the study, interviews, spot counters, trail counters would be used. There are currently no restrooms to go to. We will work these issues into our PAD discussion.
- Comment: CDFW – The project creates reservoirs, our department needs to stock those to maintain the value of them to fishermen, and the stocking plan is based on use data. We will ask for a study to quantify fishing pressure on reservoirs to inform mitigation measures for stocking.
 - Relicensing Team – Are you thinking of something like the Bishop studies?
 - CDFW – Yes, like a good creel survey. We have no idea how many fishermen are using the lakes other than a qualitative guess. To capture the target species, catch rates would be the intent. The study title would be "Recreational Fishing Assessment".
 - Relicensing Team – Would it only include the reservoirs or creeks as well?
 - CDFW – It would be reservoirs mainly, with a cursory creek survey too. We need more data. Most fishermen are probably targeting the lakes except for around campgrounds where people follow the stocking truck.

- Comment: Access Fund – I need a better look at the project boundary line. There is a substantial amount of ice climbing that happens below Ellery Lake. Where are the flows coming from and will they change? What fact finding do I need to do to figure out what's happening there?
 - Relicensing Team – I looked to find directions to these sites but couldn't find them while developing the draft PAD. Can you share that information?
 - Access Fund – Yes, I can provide how people are getting in there. Travel would be over snow, not on trails, resulting in less impacts on vegetation and soil. I would be happy to provide this information. It's a unique area for ice climbing.
 - Relicensing Team – Does the USFS track climbing access use, etc.? The boundary does not extend down into the canyon below Rhinedollar Dam. So what would be nexus to the project be for this. How could the project impact this – flows?
 - USFS – The Inyo National Forest does not track climbing use in the area.
 - Access Fund – I will do some research and outreach and get back to everyone.
 - SCE – Recognize that the penstock is within the red line on the map, water is within the penstock there, there is no open flow of water in that area. Ice climbing is down within the face, I think the ice climbing is north of the penstock outside of the project boundary.
 - Access Fund – I assumed that was the case too. Just wanted to flag that there is climbing in the area. It may not have anything to do with the project.
 - Relicensing Team – I can provide the current project boundary to everyone if that would be useful. In the PAD we discuss how lots of the trail access points are near the Poole Powerhouse for access of these ice climbing sites.
- Comment: North Fork Mono Tribe - Where will you be addressing Cultural Resources, archaeological sites either via trails or your operation?
 - Relicensing Team - We do have a Cultural Resources TWG. We will also be making sure that there is communication between the study leads. Audry Williams, Shelly Davis-King, and Lyn Compas (Cultural-Tribal TWG Leads) are aware of what is happening within the other TWGs. For the purposes of our notes, we will capture the concern of impacts from recreation on archaeological, cultural, and tribal sites. We will find the right place to address this.
- Comment: USFS – The County has an easement on the road to the Poole Powerhouse, they plow it in the winter. It's a native surface road. As far as the penstock, climbers were going up there and trying to ice farm [create a new area to ice climb].
 - SCE – If the penstock is contributing to the formation of water/ice that is something we need to know about.
 - MLC – That was an old rumor that the SCE penstock or other infrastructure had contributed to ice buildup above Poole Power Plant. I'm not a climber, local climbers may know better.
 - USFS – It was real, people were posting this online and there was security, etc.
 - SCE – I didn't realize people were tampering with it and causing a problem.
- Comment: North Fork Rancheria of Mono Indians of California - Does the Inyo National Forest have any special use permits in the FERC boundary? I just want to know how the area is utilized by different groups to understand any impacts or future uses.

- Relicensing Team – At Saddlebag there is a resort, a marina, it's a Special Use Permit to a third party entity. Tioga Resort also has a Special Use Permit.
- USFS – Agreed, both are SUPs. There may also be temporary permits like researchers or outfitting and guiding, may not be in FERC boundary, and they are not permanent structures.
- Relicensing Team – All of the SUPs are non-project use.
- North Fork Rancheria of Mono Indians of California - I can follow up with the USFS for more info.
- USFS – In the past, at Saddlebag there have been conflicts between the resort shuttle service and instream flows (keeping the lake level high enough), which ties into the Aquatics TWG. There are no lake level requirement on Saddlebag so the resort has issues sometimes with lower levels.
 - SCE – The current provisions are that the flows at Saddlebag are reviewed annually in April and August with USFS to be cognizant of the lake levels. There is extra attention given to it.
 - USFS – We have gotten on top of it recently. The SUP permittee was not very happy in the past.
- MLC – There is a trail that runs across Saddlebag dam. People do use that in the summer in good volume to access the wilderness area in 20-Lakes basin. There is great access now and it has improved in the last few years.
 - Relicensing Team – That is a formal USFS trail and it is a full loop around Saddlebag Lake. There is an official trailhead there with Inyo National Forest. The loop does go within the project boundary but is maintained by the USFS.

6. Schedule & Next Steps

- The Relicensing Team reviewed the Study Plan request template and noted that it may be modified for this group because of the great discussion. We can fit these questions in to studies we have already been considering. Within a week, can you all give us your best shot of goals and objectives for studies? We are interested in how they tie into resource management plans. Rather than filling out the template, we can look at Bishop Creek's studies and see how they can be modified for Lee Vining. In conjunction with the notes we captured today, we can easily get to goals and objectives for proposed studies: recreation use and needs (identify facilities, roads pullouts, address creel questions) and a condition assessment (interest in accessibility and condition of facilities). In about a week can you get back to us?
 - MLC accepts the timeline but the USFS stated they wouldn't have the capability of filling out the template and request 2 weeks to get documents back to the Relicensing Team.
 - Relicensing Team – We are moving quickly on preparation for February TWG, so sooner the better and we are trying to get the meeting materials out in advance. We will take the info from you whenever it is ready.
- The Relicensing Team reviewed the upcoming TWGs timeline.

- Reminder that everyone can ask questions throughout, not only during the meetings. And we can do our best to give out notes to those that can't make meetings. We can also work on individual meetings with you, as needed.
- Matt Harper will reach out to folks if we have outstanding data needs.
- Finlay Anderson is to send out the memo of Bishop study plans.
- Draft meeting notes to be circulated for review
- Meeting invitations for February and March to be sent out
- Additional action items are underlined above

7. Upcoming TWG Meetings

Aquatics 2	February 22, 2021 10am
Terrestrial 2	February 24, 2021 10am
Cultural and Tribal 2	February 24, 2021 1:30pm
Recreation and Land Use 2	February 25, 2021 10am
Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388

RECREATION AND LAND USE TWG 2 MEETING NOTES FEBRUARY 25, 2021; 10 AM - 11 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Matthew Harper, Kleinschmidt
Matthew Woodhall, SCE
Martin Ostendorf, SCE
Shannon Luoma, Kleinschmidt

Agencies and Interested Stakeholders

Adam Barnett, USFS
Bartshe Miller, Mono Lake Committee
Katie Goodwin, Access Fund
Monique Sanchez, USFS
Nick Buckmaster, CDFW
Sheila Irons, USFS
Stephen Bowes, NPS

2. Compiled Action Items

-
- USFS and Mono Lake Committee will get the relicensing team their study requests as soon as possible.
 - Relicensing team to request ice climbing guide permit/usage information from USFS.

3. Welcome, Introductions, Review of Notes and Other TWGs' Potential Studies

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and participants via chat
 - Review of notes/comments from January
 - Finlay Anderson listed the potential studies / study requests that are being discussed in the other resource TWGs

4. Discussion of Resource Management Objectives / Potential Study Requests

-
- **Creel Census**
 - Comment: CDFW
 - To summarize this study request: we don't have a good estimate of fishing pressure at the project. The reservoirs/resources are essentially created by the project. We want to determine what the users would like to see, what fish they want to catch, etc. We want to use professional standards for a good robust creel survey, the industry standard.
 - Comment: Relicensing team – Where should this survey take place, lakes and creeks too?

- CDFW – We also want to include areas around campgrounds, but in general we are more concerned with the lakes. Consider doing a “roving creel” or “car creel” to estimate differential pressure between lakes and streams. The assumption is that fishermen using campground areas and creeks are also fishing in the lakes. We could get a rough count of creek fishers while doing the lake assessment.
- Relicensing team – We can fine tune methods the way we did with Bishop. This may be put into its own study or wrap it into the Recreation Use and Needs Evaluation.
- **Recreation Use and Needs Evaluation**
 - Comment: Relicensing team
 - This is one of the main studies that we perform. There was also an indirect request to look at trails/access; we will figure out where this should be assessed and how the resources are interconnected. We haven’t gotten any official requests with study areas and specific methods (except the Creel census). We can likely get the creel survey data collected during this Recreation Use survey. We are interested in quantitative and qualitative data on what people are doing and what they want, which involves person-to-person surveys, spot counters, traffic counters, etc. We’d suggest using the reservoirs as a starting point for a study area.
- **Condition Assessment of Existing Facilities**
 - Comment: Relicensing team
 - Most of the existing facilities are there adjacent to/on the lakes, e.g. trail that goes all the way around the Saddlebag reservoir. Landscape architects would assess the existing structures. Will put together draft study plans between now and the next meeting.
- Comment: USFS
 - Inyo National Forest is scheduling time with recreation specialists to address these questions. We haven’t responded yet to your homework assignment for study requests yet but plan to. We do want to capture any nexus with recreation facilities and activities in the area.
- Comment: Access Fund
 - Regarding recreation use at Saddlebag Lake, I use that trail a lot. I noticed last year that there is a ferry across Saddlebag Lake that cuts out about 2 miles of easy walking. There are impacts from people offloading from the ferry on Saddlebag Lake, folks scatter across the tundra grass there. There is degradation of trails and vegetation there from picnicking and offloading.
 - Response: Relicensing team – Dispersed activities like this are definitely going to be looked at, and we do want to figure out how to reduce these impacts. Have you seen camping there?
 - Access Fund – There is less camping, more backpacking, fishing, and picnicking happening. Wondering if it’s worth looking at since there are a lot of people using the area.

- Comment: Mono Lake Committee
 - We are putting together our study requests still. Possibility of focused recreation use at Saddlebag, at Ellery at pull out, and at north end of Tioga Lake in regards to vehicle density on dirt areas. There is the possibility of non-point source pollution and run off (dumping of coolers, pet waste, etc.) at these pullouts increasing due to recreation/vehicle use at these pull outs.
 - Relicensing team – California Department of Transportation owns and manages these pull outs; however, there is an Edison sign at the Ellery Lake pullout, adjacent to the project boundary. We can take a look at those.
 - Mono Lake Committee – Pulling off in these areas is due to the scenic views at the reservoirs, so they seem related to the project. Camping right at the shoreline of Saddlebag and Tioga Lakes is increasing, with no buffer between vehicles. This isn't happening at Ellery Lake because there is no direct driving access to the shoreline.
 - Relicensing team – There have been requests in Aquatics TWG for an erosion study and water quality study; these concerns might fit into these requests if we include the recreation areas in the study areas. We haven't started talking about vehicle runoff specifically yet, so Mono Lake Committee should submit this in a study request if you're interested in this.
- Comments: USFS
 - The road to Poole Powerhouse is a native (dirt) surface road and is only plowed because Edison needs to get access into the plant, and it is adjacent to the creek.
 - There is no overnight dispersed camping allowed here, only in wilderness areas and in developed campgrounds.
 - Comment: Access Fund – It is already well known, but this year especially this added camping pressure is a product of needing to have permits to enter Yosemite. There is a lot of dispersed camping anywhere you can fit a vehicle. The permit requirement was were reinstated for 2021, it was implemented as a response to Covid-19.
- Comment: Relicensing team
 - A question for USFS, regarding ice climbing, some guides lead groups out for climbing in the canyon and those require permits, can that permit information be compiled and shared with us to be included in our PAD/DLA. If guides have to report numbers, etc.
 - Response: USFS – Yes, we can get that for you if you send me a note I can ask the district permit administrator.
- Comment: Relicensing team
 - The question raised last TWG about trails/access will be assessed but we are not sure where yet.

5. Schedule & Next Steps

- Relicensing team will review the requests in further detail, brainstorm, and come back for next TWG with some clearer outlines and questions for TWG.

- Provide the relicensing team your study requests as soon as possible; however, it is an iterative process so if they are not totally finished by the next meeting we will be okay.
- USFS and Mono Lake Committee are still working on study requests.
- Additional action items are underlined above

6. Upcoming TWG Meetings

Aquatics 3	March 29, 2021 10am
Terrestrial 3	March 31, 2021 10am
Cultural and Tribal 3	March 31, 2021 1:30pm
Recreation and Land Use 3	April 1, 2021 10am

Lee Vining, FERC Project No. 1388

RECREATION AND LAND USE TWG 3 MEETING NOTES APRIL 1, 2021; 10 AM - 11 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Kelly Larimer, Kleinschmidt
Matthew Harper, Kleinschmidt
Matthew Woodhall, SCE
Martin Ostendorf, SCE
Shannon Luoma, Kleinschmidt

Agencies and Interested Stakeholders

Adam Barnett, USFS
Bartshe Miller, Mono Lake Committee
Monique Sanchez, USFS
Sheila Irons, USFS
Stephen Bowes, NPS

2. Compiled Action Items

-
- USFS will get the relicensing team their study requests as soon as possible, likely next week.

3. Welcome, Introductions, Review of Notes and Other TWGs' Potential Studies

-
- Matthew Woodhall provided a Safety moment
 - Introductions of team and participants via chat
 - Review of notes/comments from February
 - Comment: Adam Barnett, USFS
 - Study Plan requests from USFS are being submitted next week
 - Finlay Anderson listed the potential studies / study requests that are being discussed in the other resource TWGs

4. Discussion of Resource Management Objectives / Potential Study Requests

-
- The Relicensing Team discussed the study requests received from stakeholders and which aspects are being considered and which are aspects are being omitted.
 - **Creel Census**
 - **Road pullouts** – We see the road pullouts as more of a CalTrans issue, because they manage the roads and pullouts. There is a lack of project nexus so these are currently not part of our Recreation or Water Quality studies.

- **Trails/Access** – Requested by Tribal group, we are acknowledging the overlap between Recreation and Tribal.
- The Relicensing Team discussed the three currently proposed study plans: **Recreation Use Evaluation, Condition Assessment of Existing Facilities, and Project Boundary and Roads.**
- Comment: USFS
 - We are working on additional details for those three studies using your form. There are other things we'd like you to capture. Some of the use is outside of the currently defined project boundary but has a strong nexus, want to make sure those things aren't overlooked in analysis. We want to make sure that the Poole Powerhouse access road and access areas to recreation areas along the road are considered. Also include an assessment of use of project area when people come up from the campgrounds farther downstream on Lee Vining Creek; we would like a better understanding of if people using these downstream campgrounds are using the area in the project for recreation. We are putting these questions/concerns into a format for the relicensing team to use.
 - Response: Relicensing Team - These requests do seem to fall within our studies and seems like you may just be asking for us to expand the study area a bit.
- Comment: USFS
 - We are requesting one additional study for **Visual Quality**, using the scenic quality objectives that the USFS has for Lee Vining Canyon. There are requirements to ensure that the project is in compliance with the management plan. This request is being put together too.
 - Response: Relicensing Team – Requests for a visual study don't arise in every relicensing but it is not an unusual one. Please put it together into a request with nexus and methods so we can assess it. We do overlay USFS management plans onto our studies, so maybe that isn't actually a new study request.
 - Comment: Relicensing Team – Is the USFS thinking of looking at SCE or USFS facilities or both in the visual assessment?
 - Response: USFS – We want to look at impacts of development in general in the canyon, perhaps both USFS and SCE facilities.
 - Response: USFS – A visual study is needed because of the landscape scale of the resources – facilities that are in close proximity to the resource need to be integrated with the scenic goal of the area.
 - Comment: Relicensing Team – Does the USFS have a baseline visual study/assessment for the project area or Lee Vining Canyon?
 - Response: USFS – There may be one from the 2019 forest plan process. I will look.
- Comment: Mono Lake Committee
 - Considering **road pullouts**, whoever is responsible for them, they do cross between both CalTrans and SCE. The pullouts affect the project area, view shed and recreation experience, bathrooms, etc. The Recreation Use Study will probably cover it, but existing facilities clearly don't meet the needs of visitors (especially bathrooms). Point source pollution is still an issue. Dispersed camping and overnight parking are also being invited in these areas. The conditions/facilities of pullouts around the project area are

promoting incremental use. I'm thinking specifically of the Rhinedollar and Saddlebag pullout locations.

- Response: Relicensing Team – It seems like some of the elements of the pullout use concerns will be captured in our studies as they are now. However, we aren't looking to put in anything new. This is tricky because a lot of the use is from folks on the way to Yosemite NP, so the project isn't necessarily inducing the recreation, it's more the Sierra Nevadas bringing people in.
- Comment: USFS
 - Is it correct that you are only going to look at visitor use in developed areas?
 - Response: Relicensing Team – Yes, that's correct, that is our starting point. We are looking for guidance from stakeholders.
- Comment: USFS
 - Are you considering the USFS National Visitor Use Monitoring (NVUM) surveys?
 - Response: Relicensing Team – Yes, we do want to incorporate those here and there is one occurring this year.
 - Comment: Relicensing Team - Do you know where in Lee Vining Canyon they are surveying? The NVUM survey may negate the need for us to do some of our study.
 - Response: Adam Barnett, USFS [response provided after meeting end] – The 2020-2021 NVUM sampling plan for the Inyo includes these locations in Lee Vining Canyon/Saddlebag area: Moraine CG – 3 days, Lower Lee Vining CG – 3 days, Saddlebag trailhead group CG – 1 day, Saddlebag day use – 1 day.
- Comment: Mono Lake Committee
 - SCE isn't responsible for the increase in travelers, but SCE is the custodian for this part of the forest where their project is. The project encourages visitors to stop along the way. People can't reasonably enjoy the area as they have in the past given the lacking existing facilities.
 - Comment: USFS – We hope that the NVUM surveys will help to determine WHY people are visiting. If they don't, we can try and capture that in our study requests.
 - Comment: Mono Lake Committee – People stop where there are pullouts, or any spaces off the road to park, those are invitations to recreate for dog walking, launching a kayak, taking photos, etc.
 - Response: Relicensing Team - People would be pulling off and looking at the scenery despite the hydro project. The lakes would be there without the project, they'd be smaller, but they would be there.
 - Comment: USFS – It seems like we are assuming a lot, that people are there not for the project. Assuming people are using the pullouts as an invitation. There are a lot of unknowns. We need to think about how to ask these questions. Unless there is a study that defends it, we need to take a deeper look. We can also come up with a recreation plan where we come back together at look at these needs every so often.
 - Comment: Relicensing Team - There is definitely a data gap around those questions. Proposed recreation use studies can be tailored to characterize this type of use and answer these specific questions. When will the NVUM be finished?

- Response: Adam Barnett, USFS – The NVUM survey ends in September 2021, so data will be available more like in January 2022.

5. Schedule & Next Steps

- Our plan is to skip a TWG in April, so the next TWG would be the end of May
- Comment: Monique Sanchez, USFS
 - Are recreation studies only proposed in the spring/summer? We may not be capturing all of the project-induced recreation if we only focus on one time of year.
 - Response: Relicensing Team – A schedule for proposed studies would be tailored to the recreation season(s) at this location, understanding that recreation use changes based on the season (spring/summer compared to winter). All recreation at the project will be characterized, though the schedule of data collection at certain times of year will be based on filling data gaps and stakeholder interest.
- USFS is still working on study requests.

6. Upcoming TWG Meetings

Aquatics 4	May 24, 2021 9:30am
Terrestrial 4	May 26, 2021 10am
Cultural and Tribal 4	May 26, 2021 1:30pm
Recreation and Land Use 4	May 27, 2021 10am

Lee Vining, FERC Project No. 1388

RECREATION AND LAND USE TWG 4 MEETING NOTES MAY 27, 2021; 10 AM - 12 PM PDT

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date. These notes are not a verbatim account of proceedings, are not meeting minutes, and do not represent any final decisions or official documentation for the project or participating agencies.*

1. Attendees

Relicensing Team Members

Carissa Shoemaker, ERM
Finlay Anderson, Kleinschmidt
Karen Klosowski, Kleinschmidt
Kelly Larimer, Kleinschmidt
Martin Ostendorf, SCE
Matthew Harper, Kleinschmidt
Matthew Woodhall, SCE
Shannon Luoma, Kleinschmidt

Agencies and Interested Stakeholders

Adam Barnett, USFS
Bartshe Miller, Mono Lake Committee
Monique Sanchez, USFS
Nick Buckmaster, CDFW
Sheila Irons, USFS
Stephen Bowes, NPS

2. Compiled Action Items

- Relicensing team will distribute draft meeting notes
- Relicensing team will distribute Study Plan outlines with the PAD
- Relicensing team will set September agency meeting dates and send invitations
- Relicensing team will assess the cross-over with Aquatics TWG/Study Plans (including the Hydrology Operations Model) to assess flooding of campground sites, at what water surface elevation and when
- USFS to look at concessionaire's SUP to see if driving in Saddlebag Lake bed is prohibited

3. Welcome, Introductions, Review of Notes and Other TWGs' Proposed Studies

- Matthew Woodhall provided a Safety moment
- Introductions of team and participants via chat
- Review of notes/comments from April
- Finlay Anderson listed the potential studies / study requests that are being discussed in the other resource TWGs
- Comment: Monique Sanchez, USFS
 - When will draft meeting notes be posted, when do you need our input, and will they include the Study Plan outlines?
 - Response: Finlay Anderson, Relicensing Team – We post the notes when we are confident that we have all the feedback from you all. Let us know if you want more time. The notes would include this May TWG meeting, not the Study Plan outlines. The

Study Plan outlines would be kept at the TWG-level for comments, not posted to the website. However, the notes will capture some of the discussion around the studies. They are high-level and shouldn't take too much time to review.

4. Discussion of Resource Management Objectives / Proposed Studies

- The Relicensing Team discussed the proposed studies, and aspects that have been included from stakeholder requests. Study Plan outlines will have comment matrices showing the aspects we included and those we didn't include for various reasons.
- **Recreation Use Assessment**
 - Expanded dispersed use study area to surround each project reservoir.
 - Both summer and winter activities will be included.
 - Kayaking information will be collected.
- **Facilities Condition Assessment**
 - Includes assessment of sign inventory, fishing line disposal stations, and litter disposal.
 - Interpretive signage needs can be discussed after the studies are completed.
- **Project Boundary, Lands, and Roads**
 - Will look at current Project lands and operations and determine if the Project boundary is appropriate.
 - Questions raised regarding roads will be assessed here, instead of in the facilities condition assessment.
 - Staging areas, materials storage sites, and borrow pits will be assessed.
 - Wilderness boundary error has since been corrected in USFS data and incorporated into Project figures; this change correctly reflects that portions of Ellery Lake and Hwy 120 are not within the USFS wilderness boundary. The Map on SCE's relicensing website has been swapped, and PAD figures have been corrected.
- **Visual Quality Assessment**
 - SCE agrees to perform a visual quality assessment generally based on the study request and examples provided by the USFS.
- Comment: Adam Barnett, USFS –
 - Will there be a more detailed point-by-point response to our requests coming soon?
 - Response: Matt Harper, Relicensing Team – Yes, this will be coming soon, hopefully next week with the Study Plan outlines. We're also discussing these in more detail in this meeting.
- Comment: Adam Barnett, USFS –
 - What is the next step after we internally review your responses to our requests?
 - Response: Finlay Anderson, Relicensing Team – Normally, you would see the Study Plans for the first time when the PAD/NOI are filed, then you'd comment on them. But for this Project, we have front-loaded it, and you are seeing things ahead of time; however, this doesn't eliminate the possibility for you to continue to comment when PAD is filed. We invite you to provide a high-level response back and we can include that in the PAD. We fully expect the conversation about Study Plan goals and objectives to continue once the

PAD is filed. Nothing is final until we go through a more thorough review of the Study Plans with the stakeholders. Starting in August it will be more formal through the FERC TLP process.

- Comment: Monique Sanchez, USFS –
 - A matrix of comments, responses, and the Study Plan outlines will be released together?
 - Response: Finlay Anderson, Relicensing Team – Yes, hopefully next week. We may not wait to put things in the PAD but are also not assuming that you have agreed on everything in the studies still being discussed.
- Team discusses study areas for recreation use and facilities condition assessments. The team agrees that developed sites around each of the Project reservoirs warrant inclusion in the proposed studies but do not consider many other sites proposed in the USFS' study requests to have a nexus to the Project. The team proposed to utilize the first study season for user surveys to determine which sites have a substantial connection to the Project and may warrant broader studies (RUNS, Facilities Condition, Dispersed Use) in a second study season.
- Comment: Adam Barnett, USFS –
 - Appreciate you breaking it down. We all need a better understanding of primary purpose of recreators in the area. It's a substantial investment in quantitative research, is that typical in other relicensing efforts?
 - Response: Finlay Anderson, Relicensing Team – The goal here would be to make sure that the Project use and needs for the future are addressed in the next license term, but ensure that SCE isn't responsible for things unrelated to the Project. There shouldn't be an expectation for SCE to be responsible for things unrelated to the license.
 - Response: Matthew Woodhall, Relicensing Team – Some of the recreation areas are attributable to Project features; Those elements are called out and proposed as study areas; the other areas, we just don't know about, so we want to gather more information before we make the decision to include them in future studies or not.
 - Response: Matt Harper, Relicensing Team – We're at the stage where we want to work on the details and methods with you, the stakeholders, to ensure we gather the data we need at the appropriate locations.
- Comment: Monique Sanchez, USFS –
 - What are the proposed study seasons? How will you determine if you'll do a second season for each study? Since we had such an abnormal amount of use in 2020 because of COVID-19, I'd like to hear back from our recreation specialists as the first season may have odd results. It could be a high or low use year in 2021/2022, having both seasons of data would help us get a better understanding of what is going on.
 - Response: Matt Harper, Relicensing Team – We will work with you all to determine the study seasons. Since we have started the process early, it allows us to have the flexibility to use two study seasons and perhaps let recreation use normalize by the time 2023 field season rolls around. We have had a similar situation at Bishop Creek, where we have had to be flexible in altering schedules and methods to adapt to changes on the ground. Our hope is to gather representative use data for the area, but we will also work closely with this TWG to determine when we need to be flexible and change our methods.

- Response: Finlay Anderson, Relicensing Team – If it was not clear, we should clarify that no data is being collected in 2021. This year we are working on methods and lining out our effort -- Next year we hope is a more normal recreation year. With Bishop Creek, we have learned to expect the unexpected and may need to adapt our methods and approach, as needed. We appreciate you raising this as a concern.
- **Recreation Use Assessment**
 - Comment: Matt Harper, Relicensing Team –
 - Could you provide more detail on what you wanted to characterize or analyze with the Saddlebag Lake water taxi service?
 - Response: Adam Barnett, USFS – This may have been Lawson Reif's concern. In general, the taxi service is conveying people to the back of Saddlebag Lake, so it is part of use for the area and may affect the type of use occurring at the back end of the lake as people can take a boat to carry their stuff instead of having to walk.
 - Response: Sheila Irons, USFS – Lake levels can affect the taxi operation, so that is also tied into the use.
 - Response: Matt Harper, Relicensing Team – We will definitely look into this. If USFS could provide concessionaire and special use permit information, that would be very helpful in characterizing this use.
 - Comment: Matthew Woodhall, Relicensing Team –
 - What is the status of the concessionaire? Has it been repurchased?
 - Response: Sheila Irons, USFS – The same person that runs Tioga Lodge bought it, so they will be starting to operate again sometime soon. Adam may be able to provide their anticipated start date.
 - Comment: Bartshe Miller, Mono Lake Committee –
 - Expressed concerns about a large number of vehicles driving and parking in Saddlebag Lake bottom when water levels are low. The access point observed is near the concessionaire water taxi. Where is this being addressed, is the concessionaire involved, and how does it affect SCE's operations?
 - Response: Matt Harper, Relicensing Team – We could look at this in the dispersed use portion of the study but it might also be appropriate with the Aquatics Water Quality Study if point source is an issue. If it is associated with the concessionaire, I'd think USFS would have restrictions for that.
 - Response: Finlay Anderson, Relicensing Team – Driving in Saddlebag Lake bed is not being addressed in another TWG. If we want to analyze it, this TWG is the right place. I would think that the USFS' Special Use Permit (SUP) would prohibit driving in the lake bed. Have we looked at the SUP for that concessionaire? That is more of a USFS condition/SUP question that we need to look at.
 - Response: Bartshe Miller, Mono Lake Committee – SCE should probably study it to make sure it's actually happening. There is no clear definition between foot traffic, bikes, and off-road vehicles around Saddlebag Lake. It's worth looking at holistically.

- Response: Matthew Woodhall, Relicensing Team – Yes, it would be interesting to look at the SUP and determine if this activity is a prohibited under the SUP.
- Comment: Bartshe Miller, Mono Lake Committee –
 - Mono County is pursuing a grant to improve the road and infrastructure up to Saddlebag Lake. This could be a problem if not done with inter-agency collaboration and SCE to help manage some of the issues we are studying here. The road is beyond repair, and they are considering paving it.
 - Response: Sheila Irons, USFS – That is interesting because it's a county road except there is no instrument in place. It is a big problem. It's related to a permit from the 60s that was never signed.
 - Response: Matthew Woodhall, Relicensing Team – Mono County did reach out to SCE for this grant and proposed all the improvements.
 - Response: Adam Barnett, USFS – The Inyo National Forest has been involved too.
- Comment: Monique Sanchez, USFS –
 - What is being considered with dispersed recreation use? Can we talk about the definition of dispersed?
 - Response: Matt Harper, Relicensing Team – To me, dispersed use refers to any use that is not formally developed or managed. For example, the Saddlebag Lake Trail is within the USFS trail system and is managed by the USFS, but all the spur trails off of it are unmanaged. This is largely my own terminology, so we alter that if it is confusing. I understand that the USFS' definition of dispersed use refers specifically to camping outside of a developed campground. The intent of characterizing these uses is to determine whether they need to be formalized or a management action put in place to prevent the use from happening in the future.
 - Comment: Sheila Irons, USFS – Just so you're aware, the Lee Vining Canyon is called a 'concentrated recreation area' and no dispersed camping is allowed, but that doesn't mean it doesn't actually happen.
 - Comment: Monique Sanchez, USFS - When you say "trails were formalized" do you mean trails that were adopted into the USFS trail system?
 - Response: Matt Harper, Relicensing Team – Yes, if someone is managing it, I'd consider it formalized. If campsites are being used, and it was decided to be turned into a campground, then I would consider it to have been formalized.
- Comment: Matt Harper, Relicensing Team –
 - Could you provide more detail on your request to study access to Ellery Bowl for backcountry skiing and climbing?
 - Response: Adam Barnett, USFS – We're talking about characterizing the use of the area and quantifying that. There are no specific safety concerns that I know of.
 - Response: Matt Harper, Relicensing Team – What would we use the data for?
 - Response: Adam Barnett, USFS – It is a component of winter recreation use in the canyon.

- Comment: Bartshe Miller, Mono Lake Committee – It's a popular place for people to wander over to get to snow in the spring when the roads first open up. Non-skiers will go there to touch the snow.
- **Facilities Condition Assessment**
 - Comment: Matt Harper, Relicensing Team –
 - Could you provide more detail on your request to evaluate the relationship between flood damage to campgrounds in lower Lee Vining Canyon and project operations? Was this a one time or re-occurring event?
 - Response: Adam Barnett, USFS – This is a routine event in the spring, campsites are being eroded away down Lee Vining Creek, so it could be related to the flow regime.
 - Response: Finlay Anderson, Relicensing Team – We should have someone from Operations on this call, but the approach is to lower the reservoirs as much as possible in winter to collect spring runoff, though there is only so much they can do. The Project is probably preventing more flooding and impacts by regulating flow. We should determine the water surface elevation at which flooding occurs to help us understand the flow regime below Poole Powerhouse. The Hydrology Operations Model can help us understand how often spring runoff exceeds storage capacity based on wet/dry/normal water year. There are elements we can understand with these questions. However, if we think the runoff is in the spring, that may be something outside of what the project can mitigate.
 - Comment: Monique Sanchez, USFS – Looking at flood levels should be easy to measure. The fish habitat study team could take some measurements when they are out there. Knowing when the flood levels cause resource damage is an easy question to answer.
 - Response: Matt Harper, Relicensing Team – We can discuss this with the water group and figure out how best to approach it.
- **Project Boundary, Lands, and Roads**
 - No questions raised
- **Visual Quality Assessment**
 - Comment: Matt Harper, Relicensing Team –
 - USFS was going to check for additional information regarding baseline assessments. Was anything found during that search?
 - Response: Adam Barnett, USFS – Yes, I checked with the FS planner. Unfortunately, we don't have field-based data for this.
 - Comment: Matt Harper, Relicensing Team –
 - Are you proposing to look at impacts of both USFS and SCE facilities? If so, we recognize that there may be efficiencies to look at both during this process but would want to be clear on who is responsible for what efforts.
 - Response: Adam Barnett, USFS – The study request was targeted at SCE facilities, but visual quality observations would likely also capture some USFS facilities, to some extent. And we agree we should be clear about who is responsible for what.

- Response: Matt Harper, Relicensing Team – As we put the outline together, we can figure out how that would work.
- Relicensing team believes the existing project is part of the baseline conditions for this study because the management plan considers historic buildings to be part of the baseline.
- The study would document USFS visual quality objectives, land management plan objectives, and document previous license parameters from the visual plan (paint colors etc.). We want to make sure that we're all on the same page as far as objectives. Existing conditions are the baseline, we don't intend to retroactively going back and modify facilities to meet the new plans objectives.
- Comment: Adam Barnett, USFS –
 - We want to think about that little, I don't want to rule out the possibility of making adjustments to existing facilities to match up with management plans.
- Comment: Monique Sanchez, USFS –
 - Usually landscape architects work with the visual study team to figure out how the visual quality impacts visitors' experience. We have done this on other projects.
 - Response: Karen Klosowski, Relicensing Team – Yes, there is usually a cross-over with the recreation user survey and visual survey to obtain site-specific data during recreation surveys.

5. Schedule and Next Steps

- Study Plan outlines will be distributed with the PAD.
- Relicensing team discussed the overall relicensing schedule
- Comment: Adam Barnett, USFS –
 - Is 9/27 week of agency meetings locked in, and are you sending an invite? Should we coordinate internally to set the dates aside?
 - Response: Finlay Anderson, Relicensing Team – We need to coordinate more here with SCE may combine Lee Vining meetings with Bishop Creek meetings in the same week, so we aren't set on those dates quite yet. We'll send out meeting invites as soon as we can.
- Comment: Finlay Anderson, Relicensing Team -
 - Does anyone have any venue suggestions?
 - Response: Monique Sanchez, USFS – Bartshe has mentioned the community center, USFS is still limited with hosting large events.
 - Response: Bartshe Miller, Mono Lake Committee – Yes, usually the community center is used but there are other possible venues.
- Comment: Monique Sanchez, USFS -
 - We are grateful for the opportunity to engage early on this Project.

6. Upcoming TWG Meetings

None proposed at this time, TBD as needed

MEMORANDUM

TO: Federal Energy Regulatory Commission
Docket P-1388

FROM: Lee Vining Relicensing Team

CC: Technical Work Groups
FERC Distribution List

DATE: July 27, 2020

RE: Lee Vining Relicensing Study Titles

INTRODUCTION

During the week of January 25, 2021 the Technical Working Groups (TWG) for the Lee Vining Relicensing met to discuss the National Environmental Policy Act (NEPA) process that the Federal Energy Regulatory Commission (FERC) would use in its review of an eventual license application for the continued operation of the Lee Vining Hydroelectric Project. Prior to the meetings, an overview of the FERC NEPA process was provided via a memorandum (Attachment A), and TWG participants were asked to use the format described to propose appropriate studies. During discussion with the TWG, members suggested that the studies that were agreed-to as part of the nearby Bishop Creek (FERC No. 1394) could serve as a starting point in identifying studies for Lee Vining. This memorandum provides a summary of Bishop Creek studies and provides a template for identifying which studies could be applied to Lee Vining Creek.

INSTRUCTIONS

1. Please review the approved [technical study plan for Bishop Creek](#). SCE does not believe that all of these studies are appropriate for Lee Vining but is seeking TWG input.
2. Indicate in the spaces provided in Table 1 if you believe the study is applicable to the relicensing of the Lee Vining Hydroelectric Project.
3. If you believe the study is applicable, please provide commentary in the blank cells of Table 1 on project specific considerations of:
 - a. Goals and Objectives
 - b. Relevant Resource Management Goals and Public Interest Considerations
 - c. Project Nexus
 - d. Study Area
 - e. Methods
 - f. Availability and applicability of project specific information
4. If there is a study that is not represented by the Bishop Creek process that you believe is warranted, and consistent with the study criteria that was distributed, please use the template (Attachment B) to provide SCE with the necessary information to evaluate.

KEY TOPICS DISCUSSED DURING AQUATICS TWG 1

Meeting notes are being developed for the TWGs conducted the week of January 25, 2021 and will be distributed soon; however, a summary of key topics discussed are provided here:

- Instream flows, peak flows
- Operations model with daily and sub-daily data
- Studies already done and recommendations that already exist (e.g., LADWP flows)
- Mass wasting on Tioga Road
- General erosion and sedimentation
- Shift from brook to brown trout
- *Didymo* presence
- E.coli rather than fecal coliform
- Recreation as it relates to water quality and fish studies

Table 1. Bishop Creek Relicensing Studies and their Applicability to Lee Vining Creek Relicensing

Study Title: TERR 1 – Assessment of Bishop Creek Riparian Community	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 2 – Invasive Plants	
Applicable to Lee Vining? (Yes/No):	Yes- should include sub unit on Didymo
Goals and Objectives (Lee Vining Specific):	Determine extent of Didymo infestation and impact of instream flow regime
Relevant Resource Management Goals of agencies or tribes (include source):	CDFA Noxious weed program CDFG wetland policy and wild trout policy
Nexus to Proposed Project Operations (Rationale):	Instream flows impact abiotic conditions for Didymo
Describe Study Area relative to FERC Boundary:	Streams located below project reservoirs

Describe Methods (if different from Bishop Creek):	TBD
Other Considerations (example existing information/available reports):	
Study Title: TERR 3 – Assessment of Special Status Plants	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 4 – Wildlife	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 1 – Instream Flow Needs and Assessment	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Determine viability of aquatic habitat below reservoirs for self-sustaining trout production
Relevant Resource Management Goals of agencies or tribes (include source):	CDFG's wild trout policy and the 2004 Strategic Plan for Trout Management

Nexus to Proposed Project Operations (Rationale):	Reservoir releases impact downstream habitats
Describe Study Area relative to FERC Boundary:	Streams within the project area
Describe Methods (if different from Bishop Creek):	Qualitative methods are acceptable instead of quantitative flow modeling if reaches are too steep
Other Considerations (example existing information/available reports):	
Study Title: AQ 2 – Operations Model	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	TBD
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 3 – Fish Distribution Baseline Study (Creek)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Evaluate existing trout fishery in order to inform recommendations for reservoir and stream management
Relevant Resource Management Goals of agencies or tribes (include source):	Per CDFW Strategic Trout Plan as well as CDFG Commission Policy, CDFW will management for sustainable trout fishing where possible
Nexus to Proposed Project Operations (Rationale):	Project impacts reservoir management and instream flows
Describe Study Area relative to FERC Boundary:	Lakes and streams within project area
Describe Methods (if different from Bishop Creek):	N/A
Other Considerations (example existing information/available reports):	N/A
Study Title: AQ 4 – Baseline Fish Distribution Study (Reservoirs)	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	Yes

Relevant Resource Management Goals of agencies or tribes (include source):	Evaluate existing trout fishery in order to inform recommendations for reservoir and stream management
Nexus to Proposed Project Operations (Rationale):	Per CDFW Strategic Trout Plan as well as CDFG Commission Policy, CDFW will management for sustainable trout fishing where possible
Describe Study Area relative to FERC Boundary:	Project impacts reservoir management and instream flows
Describe Methods (if different from Bishop Creek):	Lakes and streams within project area
Other Considerations (example existing information/available reports):	N/A

Study Title: AQ 5 – Water Quality

[N/A](#)

Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Study Title: AQ 6 – Sediment and Geomorphology

Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Determine sediment flux to inform alluvial fan management
Relevant Resource Management Goals of agencies or tribes (include source):	Restore ecosystem function to alluvial reaches; ensure adequate spawning gravels for salmonids in project area. CDFG Commission Wild Trout Policy.
Nexus to Proposed Project Operations (Rationale):	Reservoirs act as sediment traps, preventing fine sediment from reaching downstream reaches
Describe Study Area relative to FERC Boundary:	All streams in project area
Describe Methods (if different from Bishop Creek):	n/a
Other Considerations (example existing information/available reports):	

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Study Title: REC 1 – Recreation Use and Needs	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	<u>Ellery, Tioga, pullout near Ellery lake. Ferry across Saddlebag</u>
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	<u>Possibility to nonpoint source pollution.</u>
Study Title: REC 2 – Recreation Facilities Condition and Public Accessibility	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: LAND 1 – Project Boundary and Lands	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	

Other Considerations (example existing information/available reports):	
Study Title: CUL 1 – Cultural Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: CUL 2 – Tribal Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Lee Vining Relicensing Study Request Template

Requestor Name:	Alyssa Marquez
Agency /Affiliation:	California Department of Fish and Wildlife
Primary Resource Area:	Aquatics
Proposed Study Title:	Benthic Macroinvertebrates (BMIs)

1. Study goals and objectives

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

Goal 1: Determine baseline macroinvertebrate (BMI) population characteristics

Goal 2: Characterize BMI responses to stream alterations caused by hydropower dams with respect to reference conditions.

Goal 3: Link BMI responses to potentially controllable physical and hydrological factors that best explain species distributions and that may be used in adaptive management of Project operations.

2. Relevant Resource Management Goals and Public Interest Considerations

18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

Fish and Game Code 1801 and 1802

18 CFR §5.9(b)(3): If the requester is a not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

NA

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

The original Lee Vining FERC License did not require surveys for BMI and I have not found other studies on BMI in Lee Vining Creek. BMI are an important food source for fish and are often used as indicators of biological condition for watersheds systems and currently we do not have baseline data on BMI. BMI can be a reliable indicator of impacts from the hydropower dams on the impacted reaches.

The focus of resource management on game fish production can pose a significant conflict with invertebrate diversity in Sierra waters. Environmental assessments for projects of many types (e.g., hydroelectric projects) typically do not contain adequate or realistic assessment of impacts to aquatic invertebrate communities and in most, there were no assessments. Projects are analyzed based on whether or not game fish (usually brown trout or rainbow trout) will be

affected. Money and resources are directed toward the analysis of this objective. Little effort is made by state and federal agencies to protect species of no known economic value or species with few human defenders. (Erman 1996).

4. Project Nexus

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

Instream flows impact abiotic conditions for BMI and reservoir releases impact downstream habitats.

The effects of dams on stream ecosystems including modification of natural flow regimes, changes in physical habitat structure, temperature regimes, nutrient loading, food webs and lotic riparian biota has been widely studied and documented. However, the response of a stream ecosystems to dams is highly variable and depends on dam structure and operation, local sediment supplies, watershed geology, regional climate and life history attributes of biota. (Rehn 2009). Therefore, it is important and necessary to conduct site specific studies to understand how the benthic macroinvertebrate population at Lee Vining Creek responds to the operation of the dams and determine what operations can be adaptively managed to ameliorate impacts to benthic macroinvertebrates.

Potential impacts from the dam operations could include sudden fluctuations in water resulting in stranding as water volume is lowered suddenly and drift of invertebrates downstream when water is rapidly lowered or raised. Year-round constant flow, a condition found in some artificially managed streams, is also abnormal to invertebrate communities of the Sierra Nevada. Under constant flow, sediment is not flushed from streams, and other poorly understood triggers to lie cycle changes and in-stream migration may not be present. (Erman 1996)

5. Methods

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

- *Coordinate locations with other Aquatics Studies such as instream habitat assessment?*

Sampling Methodology (BMI and physical habitat characteristics): Sampling methodology should be determined through consultation with experts, however, potential survey methods are provided by Herbst and Cooper (2010). Physical habitat characteristics could include wetted and bank full widths, in-stream habitat complexity, depth, dominant/subdominant substrate size, embeddedness, and channel slope. Sampling should occur throughout the reaches affected by Project operations, including sampling in the tailwaters of each dam and potentially in unregulated reference sites.

Laboratory Identification: send samples to consultants or university labs to identify.

Field Season: Ideally surveys would occur multiple time a year to get a better representation of biodiversity. Some taxa will emerge (from aquatic life stage to terrestrial life stage) in spring, some in summer, some in fall -- and larvae are most identifiable/obvious just before they emerge. The surveys would occur in early to late summer, during lows flows so streams are wadable and will result in the highest number of older (larger) nymphs/larvae (which are much easier to identify than younger nymphs/larvae).

6. Level of Effort and Cost

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

Cost: Cost of hiring experts/consultant to identify BMI samples

Laboratory identification:

- **Consideration 1:** Correct identification, even of genera or families of invertebrates, requires expertise, a knowledge of invertebrates, good up-to-date taxonomic keys, and knowledge of how to use the keys.
- **Consideration 2:** BMI identification work would need to be contracted out to consultants
 - **CDFW aquatic Bioassessment Lab** is based out of Chico, and has strong ties with UC Chico. Dan Pickard has been super helpful with insect ID questions. Could be a good resource if we can get in touch with anyone there.

Study Design

- **Consideration 1:** If natural variation over a sampling gradient is not determined or accounted for, it can result in a study either underestimating or overestimating impacts to the invertebrate assemblage.
- **Consideration 2:** Macroinvertebrate experts should be consulted on the appropriate study design to answer our questions. I have been provided with several names of experts that I can reach out to for assistance with sampling methodology and the Study in general.
 - Nancy and Don Erman are retired bug experts that could be useful resources.
 - Dave Herbst could be a useful resource if we can get in contact with him (<https://herbstlab.msi.ucsb.edu/contact.html>)
 - Jeff Holmquist who works at the White Mountain Research Center (<https://www.wmrc.edu/people/jeff-holmquist/default.html>)
- **Consideration 2:** Riffles are the easiest habitat to sample for bugs, because rocky substrates with high flow support large numbers of clinging insects, and when sampling, the bugs get swept down by flow into the net when they are disturbed. However, if you only sample riffles, then you miss taxa that primarily inhabit slower lentic waters, like predatory Hemipterans, or dragonfly/damselflies. If there is substantial pool habitat (like big pools you could swim in) in the creeks, a pool sampling protocol may be necessary (e.g. use a sweep net and complete a set number of sweeps [~ten sweeps] over a set amount of time [~30 seconds] in relatively consistent habitat [best is often -- but not always-- along pool edges, where vegetative cover is densest]).

- **Consideration 3:** Because invertebrate distribution is famously patchy, should consider at least three replicates/site (e.g., combining three separate kick net samples into one).

Literature:

Erman, N. A. 1996. Sierra Nevada Ecosystem Project: Final Report to Congress, vol. II, Assessments and scientific basis for management options, Chapter 35 Status of Aquatic Invertebrates. Davis: University of California, Centers for Water and Wildland Resources.

Herbst, D. B. and S. D. Cooper. 2010. Before and after the deluge: rain-on-snow flooding effects on aquatic invertebrate communities of small streams in the Sierra Nevada, California. *Journal of North American Benthological Society* 29(4):1354-1366.

Rehn, A. C. 2009. Benthic Macroinvertebrates as Indicators of Biological Condition Below Hydropower Dams on West Slope Sierra Nevada Streams, California, USA. *River Research and Applications* 25:208-228.

**Lee Vining Relicensing Study Request:
Reducing Peak Flow Impairment to benefit alluvial reaches downstream of the project area**

Requestor Name:	Greg Reis
Agency /Affiliation:	Mono Lake Committee
Primary Resource Area:	Hydrology and Operations – Aquatic Resources
Proposed Study Title:	Reducing peak flow impairment to benefit alluvial reaches downstream of the project area

Introduction

In 1941, the Los Angeles Department of Water and Power (DWP) began diverting water from Lee Vining Creek into the L.A. Aqueduct. For the next 45 years the creek was often completely dewatered below the diversion dam, except when floods exceeded the capacity of the diversion. This destroyed the stream ecosystem downstream of the dam and deprived Mono Lake of needed volume. Thirty-five years ago, court-ordered minimum flows were first established below the DWP diversion dam on Lee Vining Creek. Since then, there have been many studies, restoration projects, and flow requirements focused on restoring the conditions that benefitted the pre-1941 fishery downstream of the diversion dam.

The long-term approach to the Water Board-ordered restoration effort is to use components of the natural hydrograph to restore functional and self-sustaining stream systems with healthy riparian ecosystem components. The independent Stream Scientists in charge of the restoration effort have identified peak flow magnitude as a key driver of necessary natural processes, recommending that all flows in excess of 250 cfs be bypassed to the downstream reaches, and that higher peak flow magnitudes than those derived from current SCE releases be achieved.

The Lee Vining Hydropower project historically has been operated to store water in three reservoirs during the spring snowmelt runoff. This operation impairs the peak flows downstream, reducing the energy and stage needed for the restoration of the reaches downstream of the diversion dam. The 2010 Synthesis Report identified desired peak flow recurrence intervals, and slides 10-16 of November 15, 2011 Powerpoint presentation “Rush Creek and Lee Vining Creek Peak SEF Shortfall Analysis and Maximizing SEFs with Existing Facilities” (SEF Shortfall Powerpoint) frame the issue. The goal of this study would be to determine how to achieve the desired peak flow recurrence intervals by making operational changes to the Lee Vining Hydropower Project.

1. Study goals and objectives

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

- The goal of the study is to determine how to achieve the desired peak flow recurrence intervals identified in “Mono Basin Restoration and Monitoring Program: Synthesis of Instream Flow Recommendations to the State Water Resources Control Board and the Los Angeles Department of Water and Power, Final Report” McBain & Trush, Inc. and Ross Taylor and Associates, April 30, 2010 (Synthesis Report). Information obtained would include
 1. Through a review of historical data, quantify the peak flow impairment from each SCE reservoir each year for the three highest spring snowmelt peaks each year.
 2. Quantify the additional flow needed in each year based on the recommended Stream Ecosystem Flows (SEFs) in Synthesis Report Table 4-2 and Figure 4-6 (reproduced here).

Table 4-2. Recommended minimum flood peak magnitudes and recurrence intervals for Lee Vining Creek.

Recurrence Interval (years)	Lee Vining Creek Unimpaired (cfs)	Lee Vining Creek above Intake (cfs)	Lee Vining Creek Recommended SEFs (cfs)
2	373	260	300
3	420	300	370
5	510	380	440
10	630	475	540
25	680	630	650

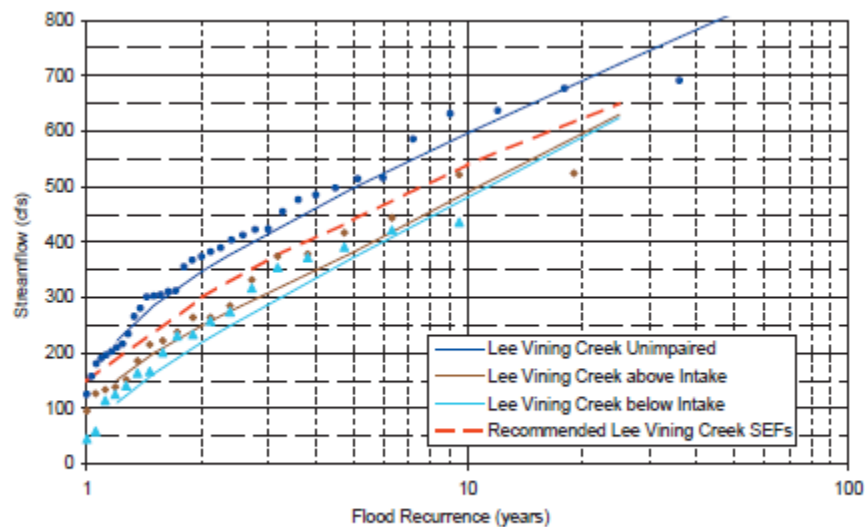


Figure 4-6. Lee Vining Creek flood frequency curves computed for RYs 1973 to 2008 (unimpaired), and RYs 1990 to 2008 (above and below Intake).

3. Evaluate feasibility of releasing additional peak flows through the development of operational scenarios for each year.
 4. Quantify how much of the additional peak flow the project is capable of reliably delivering and develop operational rules that would guide actions.
 5. Model how much generation cost there would be to delivering the additional peak flow and identify options for mitigating the reduced generation.
 6. Identify any forecasting and coordination constraints and ways to overcome those constraints.
2. Relevant Resource Management Goals and Public Interest Considerations

18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

- The State Water Board goal for restoration of Lee Vining Creek downstream of the DWP diversion dam is to restore the conditions that benefitted the pre-1941 fishery, including “functional and self-sustaining stream systems with healthy riparian ecosystem components” and “trout in good condition.”
- Synthesis Report authors (Stream Scientists) identified eight objectives during the 12-year monitoring program below the DWP diversion dam; objective 2 was to “accelerate recovery of the Lee Vining Creek ecosystem by encouraging SCE’s assistance in releasing higher peak snowmelt runoff events.” The Synthesis Report is being implemented through a 2013 settlement agreement between DWP, CDFW, Cal Trout, and the Mono Lake Committee. Changing DWP’s water rights licenses to match the 2013 settlement agreement is accomplished through annual Temporary Urgency Change Petitions, with long-term license amendments pending before the State Water Board.
- A primary tool of the restoration program is flow management. Most major geomorphic work is accomplished by peak streamflows greater than 250 cfs. In order to maximize the impaired spring snowmelt peak flows in Lee Vining Creek, DWP must cease diverting water when flow at its diversion dam exceeds 250 cfs.

18 CFR §5.9(b)(3): If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

The Mono Lake Committee has been a party to the State Water Board-ordered restoration of Lee Vining Creek since it first filed lawsuits compelling the rewatering of Lee Vining Creek downstream of the DWP diversion dam in 1986. The Committee is a non-profit citizen’s group dedicated to protecting and restoring the Mono Basin ecosystem, educating the public about the Mono Basin and the impacts of excessive water use, and promoting cooperative solutions that meet real water needs without transferring environmental problems to other areas.

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

- The Synthesis Report, including appendices and related study reports.
- Peter Vorster and Greg Reis analysis of needed additional flows (SEF Shortfall Powerpoint, 11/15/11). Powerpoint presentation describes need for additional information, including on slides 11-12 assuming a 40 cfs additional release from Saddlebag Lake Reservoir could be made, and on the last slide an excerpt from an SCE letter expressing a willingness to look at the issue if presented with a more detailed study request.

3. Project Nexus

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

- The peak flow reaching the DWP diversion dam is a combination of unregulated flow and releases from SCE hydropower dams. In most years when additional peak flow is needed, SCE has the capacity to release more and has expressed willingness to discuss (see SEF Shortfall Powerpoint, 11/15/11, Slides 10-16).
- Influence of concerns at TPR site and culvert capacity at Saddlebag Lake Road
- Forecasting issues (including snow surveys, snow pillows)
- Information sharing issues (see separate “Information Sharing” study report)

5. Methods

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

Review Synthesis Report, Review daily hydrology of a sample of years and the necessary additional flow needed from the project reservoirs, determine feasibility of operating to reduce the impairment of the peak flow. For an initial analysis, see slides 11 & 12 of the SEF Shortfall Powerpoint.

6. Level of Effort and Cost

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

Low cost—most analysis of the flow need has already been done (see SEF Shortfall Powerpoint). The main effort remaining is for SCE to determine what additional peak flow increment it can feasibly and reliably deliver, and what operational rules, forecasting, and information sharing is necessary for implementation.

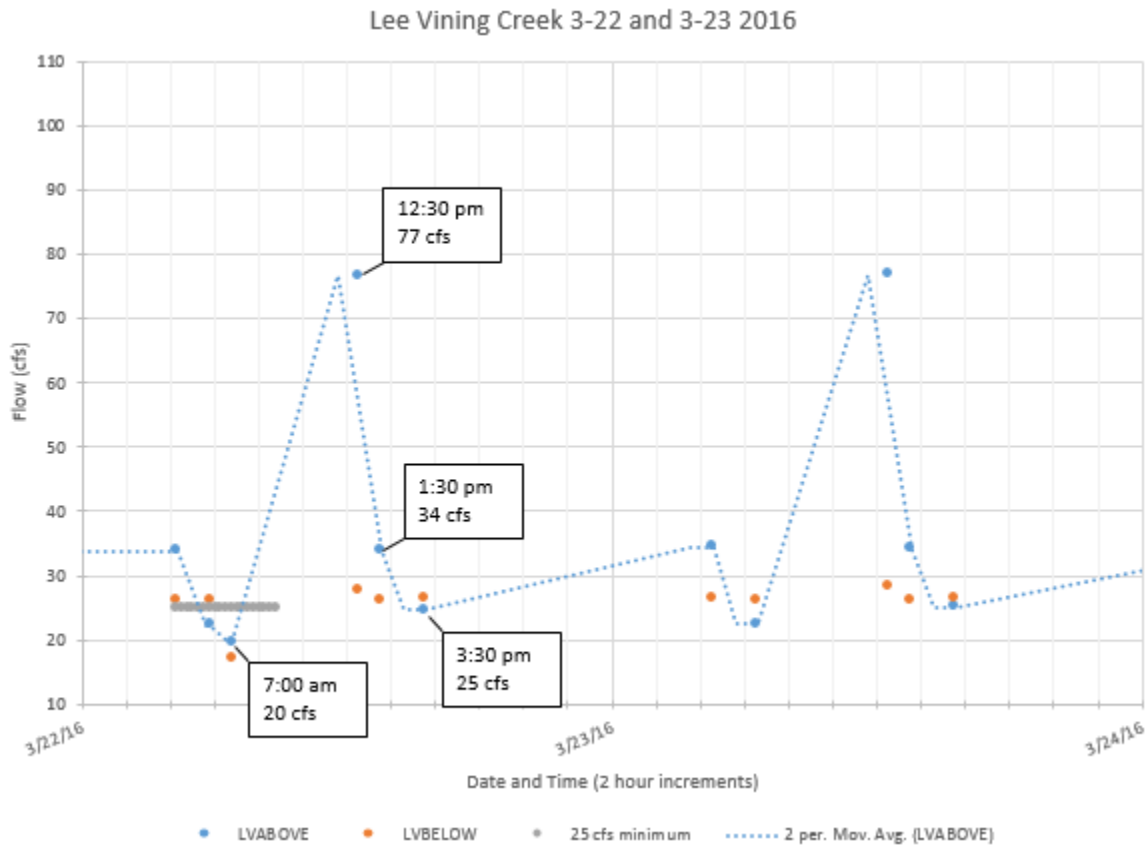
**Lee Vining Relicensing Study Request
Hydropower Peaking Operations**

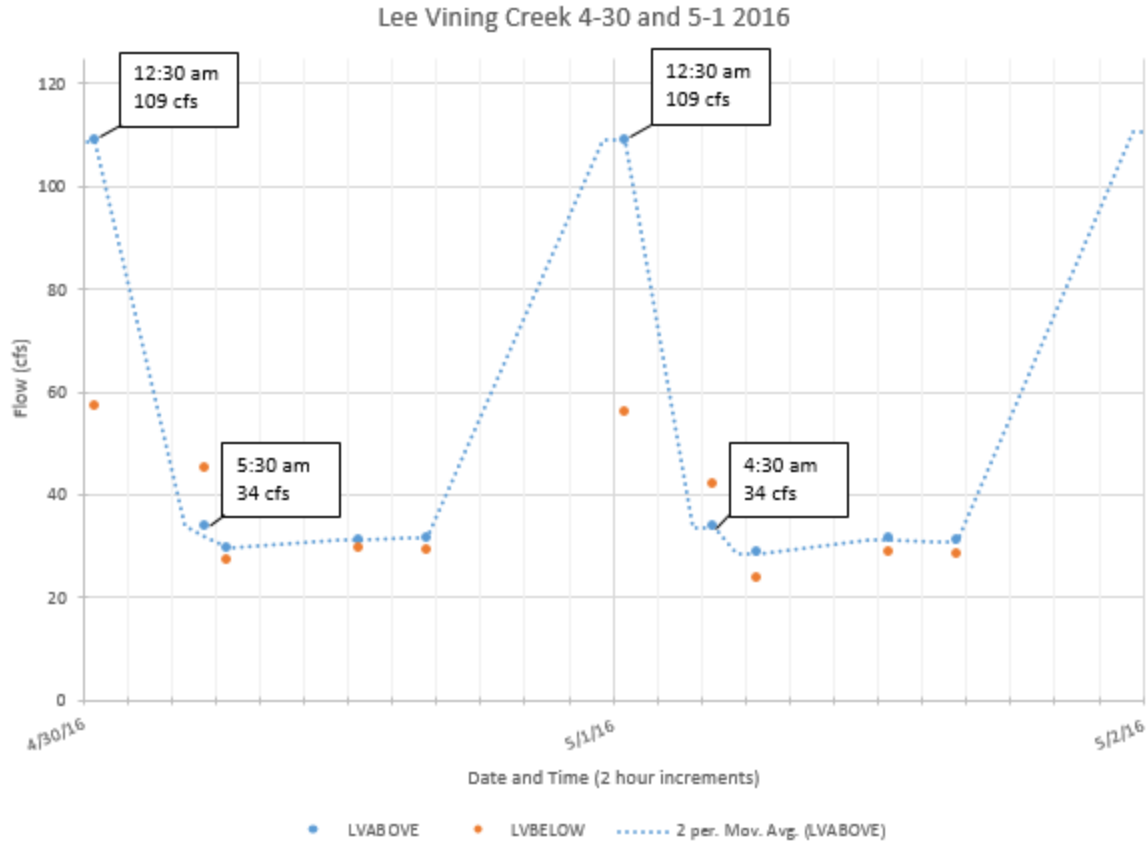
Requestor Name:	Greg Reis
Agency /Affiliation:	Mono Lake Committee (MLC)
Primary Resource Areas:	Aquatic Resources & Recreation
Proposed Study Title:	Hydropower Peaking Operations

Introduction

During the last decade, downstream of the Poole Power Plant, sudden cyclical flow and stage changes have been observed due to hydropower operations. These fluctuations have been noticed by recreationists in Lee Vining Canyon, as well as by Los Angeles Department of Water and Power (DWP) operators, and MLC staff.

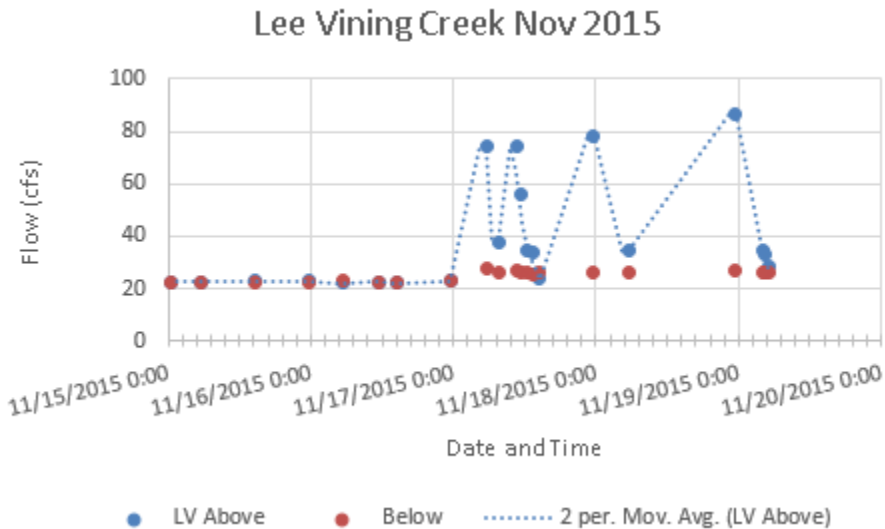
Prior to this period, sudden fluctuations were generally limited to infrequent and unexpected powerplant shutdowns. However during the last decade, the powerplant fluctuations occur in regular patterns. They tend to predominate when the powerplant has available capacity and when water is available. Generally there is a 24-hour cycle, but weekly cycles have been observed. The figures below are two examples of a 24-hour cycle from spring 2016, one with daytime and one with nighttime peaks:





In the graphs above, the blue dots are above the DWP diversion dam, orange dots are below the diversion dam (orange dots lower than blue indicates peaks are diverted to Grant Lake Reservoir), and the blue line is Microsoft Excel's calculated moving average (not intended to be accurate--shown for display purposes).

The following example is of a cycle shorter than 24 hours (e.g. two peaks in 5 hours on November 17th 2015 (5:30 am 74 cfs, 7:30 am 37 cfs, 10:30 am 74 cfs):



Studies on other rivers (such as Kennedy et al. 2016) have found that hydropeaking can have negative impacts on the stream ecosystem, but the impacts can be mitigated with modified operations. The objective of this study is to evaluate if hydropeaking operations are having negative effects on Lee Vining Creek and what modified operations might be feasible for mitigating those impacts.

1. Study goals and objectives

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

Goal: Determine how to limit hydropower peaking operations below thresholds that have significant impacts downstream of the power plant.

The objectives of the study are to determine:

- 1) What are the impacts of hydropeaking are on Lee Vining Creek? What site-specific studies are required to answer this question? In order to prioritize site-specific studies, what are the typical thresholds and patterns where hydropeaking begins to have impacts in similar streams, and based on this literature review, what peaking operations would be expected to be problematic in Lee Vining Creek?
- 2) What local data are there on impacts from the last decade of operations (i.e. since peaking began on Lee Vining Creek)?
 - a. How has the last decade of hydropower-influenced flows compared to these thresholds?
 - b. Have these thresholds been exceeded in recent years when recreationists and others have observed sudden stage changes due to hydropower operations?
- 3) What benefits does SCE gain from hydropeaking, and what potential do future operations have for exceeding these thresholds?
- 4) What modifications to operations would be required to avoid reaching these impact thresholds and are these reasonable and feasible to implement?

2. Relevant Resource Management Goals and Public Interest Considerations

18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The State Water Board goal for restoration of Lee Vining Creek downstream of the DWP diversion dam is to restore the conditions that benefitted the pre-1941 fishery, including “functional and self-sustaining stream systems with healthy riparian ecosystem components” and “trout in good condition.”

The U.S. Forest Service limits flow fluctuations below some of the project facilities for ecological purposes. There are recreation and safety considerations for Lee Vining Canyon campgrounds along Lee Vining Creek and other recreation access points.

18 CFR §5.9(b)(3): If the requester is a not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

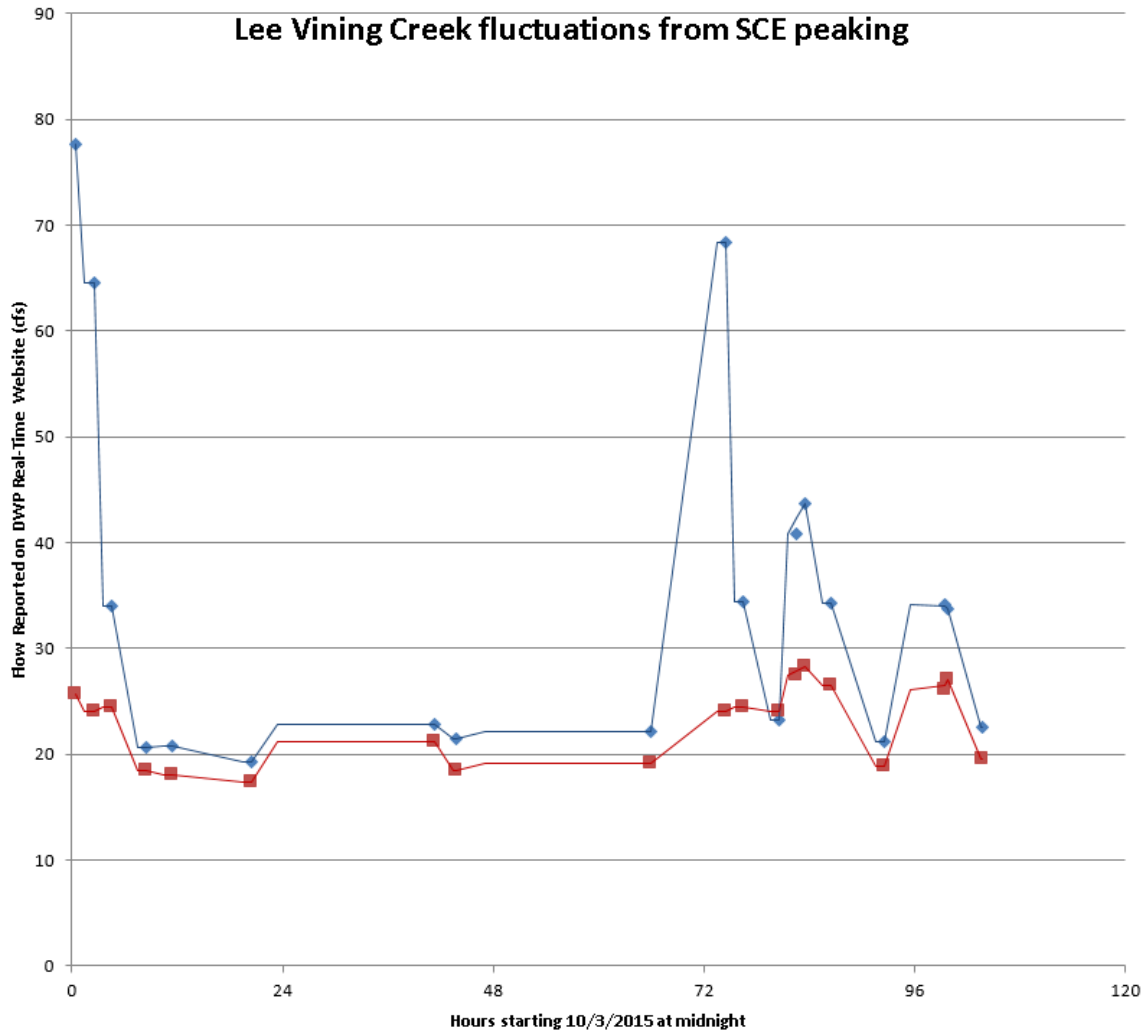
The Mono Lake Committee has been a party to the State Water Board-ordered restoration of Lee Vining Creek since it first filed lawsuits compelling the rewatering of Lee Vining Creek

downstream of the DWP diversion dam in 1986. The Committee is a non-profit citizen's group dedicated to protecting and restoring the Mono Basin ecosystem, educating the public about the Mono Basin and the impacts of excessive water use, and promoting cooperative solutions that meet real water needs without transferring environmental problems to other areas.

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

- There is extensive literature about hydropeaking impacts in other systems, and analyzing that information and following recommendations for best practices could minimize the need for site-specific studies. One example (Theodore A. Kennedy, et al. 2016 “Flow Management for Hydropower Extirpates Aquatic Insects, Undermining River Food Webs” (<https://academic.oup.com/bioscience/article/66/7/561/2463266>) indicates that a diverse assemblage of aquatic insects can still exist in a managed river, as long as the size of the artificial tides created by hydropeaking is not too large and indicates that reducing hydropeaking during crucial egg-laying periods for aquatic insects could benefit river communities.
- DWP 15-minute flow records at the Lee Vining Creek diversion dam document hydropeaking operations at that location, as well as DWP's diversion operations that at times dampen flow changes and mitigate hydropeaking impacts downstream of the diversion dam.
- The Mono Lake Committee has compiled some observations of sudden stage changes due to hydropower operations. Some examples are in the graphs in this study proposal, such as the example below, from October 2015. The blue line is above the DWP diversion dam and the red line is below the diversion, with the difference diverted to Grant Lake Reservoir.



- A May 19, 1997 amendment to FERC license article 405 limited the following flows to only below Saddlebag Dam: “The licensee shall limit water level fluctuations below project facilities by not varying flow releases from the project's dams and tailrace between October 15 and April 1 by more than or less than 10 cubic feet per second from the average daily flow in early October (between October 1 and October 14), subject to other minimum flow requirements as specified in Condition 4 in Appendix A to this order.” Any information supporting the original condition applying to all facilities and the license amendment applying it to only below Saddlebag Dam would be relevant to this study.
- Depending on the literature review, there is likely a need for site-specific studies of the impacts of hydropeaking operations on Lee Vining Creek on geomorphology, aquatic macroinvertebrates, fish, riparian vegetation, and recreation.
- There is a need for any information on the effect on project operations (and hydropower generation and revenue) from minimum flows and limited times and ranges of peaking operations. What is the importance of peaking to regional operations?
- There is a need to understand how this affects DWP’s operations. DWP has expressed concern about frequent adjustments causing the motors to wear out that operate their Langemann gate, but this concern (i.e. more frequent repair/replacement cost) may be

alleviated by the additional water diverted to Grant Lake Reservoir during the peaks of the hydropeaking operation. There may be other ways DWP can mitigate negative effects on its operations within certain flow ranges and frequencies.

3. Project Nexus

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

Sudden flow and stage changes can have impacts on geomorphology, aquatic macroinvertebrates, fish, riparian vegetation, and recreationists. A team lead by the United States Geologic Survey demonstrated that daily changes in river flow based on energy demand, known as hydropeaking, can wipe out some groups of aquatic insects, such as mayflies, that are accustomed to laying their eggs on surfaces near a river's edge (Kennedy et al. 2016). However, the results also suggest that hydropeaking practices could be modified to help alleviate some of these negative impacts.

The flow reaching the DWP diversion dam is a combination of unregulated flow and releases from SCE hydropower facilities. Over the last decade, sudden flow changes have been observed above the DWP diversion dam that can't be explained by natural causes. The stage changes at that location and others (upstream at campgrounds, downstream in habitat restoration areas) can be characterized in terms of hydropower influence, impacts can be evaluated, and mitigation measures and operational guidelines can be developed that can be included in the license.

5. Methods

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

Review of literature is a standard practice in order to assess potential impacts and issues and identify best practices. Identification of thresholds of significance for impacts is standard practice in environmental impact analysis (e.g. CEQA), and allows quick assessment of whether there is a problem or not. Review of available local data, including conducting field studies if necessary, is important in order to characterize the problems specific to this relatively new (~10 years) type of project operation.

A complete record of peaking operations over the last decade should be compiled and provided as hourly flow below the powerhouse, as well as statistics on the magnitude and rates of flow change.

If the literature review reveals a likely effect (e.g. project operations are similar to those resulting in impacts in the literature), field studies would be necessary to evaluate the local impact and determine ways it can be minimized. Examples of studies that may be necessary include:

- Geomorphology – survey cross sections below the powerhouse and evaluate geomorphic changes in channel form detectable in the “tidal” zone

- Aquatic macroinvertebrates – field sampling and comparison of the macroinvertebrate community downstream of the powerhouse with reaches unaffected by peaking
- Fish – radio tracking of a sample of fish below the powerhouse to evaluate movements during hydropeaking vs. non-peaking times and locations. Evaluate impacts to spawning (e.g. redd stranding, erosion, or sedimentation).
- Riparian vegetation – evaluate the time of year (and ecosystem benefits of limiting the time of year) peaking occurs and whether impacts on plants from stage changes or geomorphic changes is significant. Compare plant abundance, density, diversity, and regeneration in reaches with/without peaking.
- Recreationists – survey/interview recreationists who have observed peaking and determine how it affects their experience. Evaluate stage and flow changes in popular recreation sites (diversion pond, campgrounds), especially in consideration of public safety.

6. Level of Effort and Cost

18 CFR §5.9(b)(7): Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs. While it is uncertain how much field study might be required to characterize the problem and evaluate solutions, it seems reasonable that the review and evaluation of existing information could take 250-750 hours (\$50,000-\$150,000), with the high end including some field studies and modeling of potential operational scenarios that could optimize hydropower production while protecting the stream ecosystem and recreational values. Actual cost could be less.

Lee Vining Relicensing Study Request:

Information sharing constraints – evaluating options and constraints of sharing hydrologic and operations data

Requestor Name:	Greg Reis
Agency /Affiliation:	Mono Lake Committee
Primary Resource Areas:	Aquatic Resources & Recreation
Proposed Study Title:	Information sharing constraints – evaluating options and constraints of sharing hydrologic and operations data

Introduction

SCE’s reservoir storage data is necessary to calculate unimpaired runoff. Unimpaired runoff (the flow in Lee Vining Creek adjusted to subtract the effects of SCE storage) is similar to natural runoff, which is a reference condition relevant to the Water Board-ordered restoration of Lee Vining Creek downstream of the diversion dam. Unimpaired flow is also what runoff forecasts predict. Therefore in order to check runoff forecast accuracy, SCE reservoir storage is a required parameter.

For these reasons, the Mono Lake Committee (MLC) and the Los Angeles Department of Water and Power (DWP) depend upon SCE reservoir storage data. We also use information about expected future operations to anticipate flow fluctuations at the DWP diversion dam, including peak flow timing and magnitude. Other SCE data that are useful in Lee Vining Creek operations and forecasting include flow, snow, and meteorology data. In addition, the high recreational interest in the area make reservoir stage and streamflow data important to the public.

Prior to the year 2000—about the time of deregulation—SCE shared operations, flow, and storage data more openly with MLC and DWP. The Bishop Hydro office routinely provided flow and reservoir storage data to MLC and the DWP Bishop office in the form of monthly data sheets containing preliminary daily data. Expected future reservoir storage and releases were also shared when requested. DWP also relies on SCE’s notifications of sudden flow changes.

Since deregulation, the only accessible SCE data from the Lee Vining project are posted on the following two Websites:

- California Data Exchange Center (CDEC): snow surveys, weather stations, and end-of-month Saddlebag Lake Reservoir level
- United States Geological Survey (USGS): daily reservoir storage and flows posted approximately six months after the end of the water year (e.g. 2020 water year data is posted by April 2021).

The goal of this study would be to evaluate ways SCE can share data more openly.

1. Study goals and objectives

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

The goal of the study is to understand the constraints SCE has in sharing information with stakeholders, agencies, and the public. The information of interest includes forecasted operations and real-time reservoir and flow data. Objectives include:

1. Understanding relevant policies and requirements surrounding information and data sharing, including SCE, ISO, State Water Board, USGS, FERC. Review of best practices from other FERC projects where information is widely shared (e.g. San Joaquin River).
2. Determination of reasonable options for reducing or eliminating SCE's constraints on data sharing.

2. Relevant Resource Management Goals and Public Interest Considerations

18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

- The State Water Board's goal for restoration of Lee Vining Creek downstream of the DWP diversion dam is to restore the conditions that benefitted the pre-1941 fishery, including "functional and self-sustaining stream systems with healthy riparian ecosystem components" and "trout in good condition."
- DWP's water rights licenses require it to coordinate with SCE, and coordination and communication allow better management of DWP's system and the streamflows it releases; better management may benefit the ecosystem in the restoration reaches of Lee Vining Creek from the DWP diversion downstream to Mono Lake.
- A 2013 settlement agreement between DWP, CDFW, Cal Trout, and the Mono Lake Committee requires monthly reporting of unimpaired flows by DWP in order to compare observed to forecasted runoff and to identify errors in forecasting as quickly as possible, so that water management changes can be made.
- Public safety and recreation considerations, such as anticipated reservoir levels, when dams are expected to spill, or when sudden flow fluctuations are expected. Expected operations as well as real-time data would allow recreationists to better plan their activities (e.g. fishing, boating, hiking, camping).

18 CFR §5.9(b)(3): If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

The Mono Lake Committee has been a party to the State Water Board-ordered restoration of Lee Vining Creek since it first filed lawsuits compelling the rewatering of Lee Vining Creek downstream of the DWP diversion dam in 1986. The Committee is a non-profit citizen's group dedicated to protecting and restoring the Mono Basin ecosystem, educating the public about the Mono Basin and the impacts of excessive water use, and promoting cooperative solutions that meet real water needs without transferring environmental problems to other areas.

In order to calculate unimpaired flows (for use in forecasting and comparing observed to forecasted runoff), SCE's reservoir storage data is necessary. Currently, SCE's data aren't available until they are posted on the USGS Website about six months after the end of the water year. This delay reduces the effectiveness of water management and requires guesswork and estimation (based on in-person visits to reservoirs, years with similar hydrology, and hydro-meteorological data) of SCE's storage volumes. Certain years (such as 2020) have large error in

DWP's forecast. Sharing of SCE's data could ground truth and improve runoff forecasts. Improved forecasting could help avoid problems such as the extremely low Grant Lake Reservoir levels (relevant because Lee Vining Creek diversions enter this reservoir) that resulted from an over-forecast in 2008.

In addition, the operation of the Lee Vining Creek diversion dam (diversions, releases, and peak flow and sediment bypass) is more efficient when DWP is able to anticipate upstream operations. DWP installed a Langemann gate in 2005, allowing DWP to mitigate many of the biggest problems caused by upstream flow fluctuations. However, communication with DWP about expected flow changes is still helpful in the operation of that facility. When anticipating peak flows, MLC makes site visits to Tioga Lake to assess the stage in relation to spillway elevation (when possible if the road and snow conditions allow). If SCE were to share planned operations and real-time hydrology data, those visits would be unnecessary.

Real-time information and expected operations are also important for public interest and public safety. MLC operates an Information Center and Bookstore in Lee Vining that is also the Lee Vining Chamber of Commerce, providing visitor information to thousands of recreationists each year. MLC also has a newsletter and a blog that disseminate information about the conditions in the area. MLC conducts monitoring in Lee Vining Creek and coordinates with other researchers who would also benefit from the sharing of this information.

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

The only accessible SCE data from the Lee Vining project are posted on the following two Websites:

- California Data Exchange Center (CDEC): snow surveys, weather stations, and end-of-month Saddlebag Lake Reservoir level
- United States Geological Survey (USGS): daily reservoir storage and flows posted approximately six months after the end of the water year (e.g. 2020 water year data is posted by April 2021).

DWP has not gotten notifications about planned operations and sudden flow changes in recent years as much as in the past. The operation of DWP's facilities is more efficient when information is shared.

There is a need for the sharing of the following provisional data:

1. On a real-time Website: Planned and actual daily reservoir storage and flows.
2. With agencies and stakeholders: monthly data sheets containing daily reservoir storage and flows as has been shared in the past
3. With DWP: notifications of planned operations and sudden flow changes

3. Project Nexus

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

Project operation impairs the unimpaired flows in the Lee Vining Creek watershed. SCE data are required to calculate unimpaired flows. Unimpaired flows are the currency of runoff forecasting. Without unimpaired flow data, there is no way to assess the accuracy of runoff forecasts. Rapid assessment of forecast accuracy can make a big difference in optimizing DWP's water management, which impacts ecology downstream of the project. Overcoming SCE's hurdles in sharing provisional data would make Mono Basin water management much more efficient and avoid impacts such as the extremely low Grant Lake Reservoir levels in 2008-09 due to a mis-forecast.

Real-time information and expected operations are also important for public interest and public safety, both for recreationists (fishing, boating, camping, hiking) as well as research and monitoring activities downstream.

The study results will describe SCE's constraints in information sharing as well as best practices in information sharing for similar projects. This information will allow identification of constraints that can be modified without materially impacting SCE and protocols that can be included in the license.

5. Methods

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

Survey of Best Practices

It is standard practice to study best practices and evaluate how to implement them. Examples of agencies sharing information on real-time Websites that may provide models include El Dorado Irrigation District (<https://www.eid.org/our-services/hydroelectric/project-184>), DWP (<http://wsoweb.ladwp.com/Aqueduct/realtime/monorealtime.htm>), and SCE's Big Creek Project on the San Joaquin River (<http://66.60.143.179/scepublic/#>).

The portion of the study focused on data sharing constraints in the Lee Vining Project should include detailed explanations of:

- Any confidentiality required by other agencies (such as FERC, ISO)
- Any business advantages conferred to SCE by maintaining confidentiality of each type of data (e.g. if revealing planned operations in a wet year would put SCE at a disadvantage)
- Any new infrastructure or protocols required for sharing information, including:
 - Planned operations
 - Sudden flow changes
 - Real-time flow and reservoir data
 - Adding Tioga and Ellery reservoirs to that already shared for Saddlebag on CDEC, and increasing the frequency to daily

6. Level of Effort and Cost

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

Low level of effort to survey best practices (40 hours), moderate LOE to evaluate how policies can be changed and still meet the needs of the agencies (160 hours). At \$200/hour, total cost would be \$40,000. Actual cost could be less.

MEMORANDUM

TO: Federal Energy Regulatory Commission
Docket P-1388

FROM: Lee Vining Relicensing Team

CC: Technical Work Groups
FERC Distribution List

DATE: July 27, 2020

RE: Lee Vining Relicensing Study Titles

INTRODUCTION

During the week of January 25, 2021 the Technical Working Groups (TWG) for the Lee Vining Relicensing met to discuss the National Environmental Policy Act (NEPA) process that the Federal Energy Regulatory Commission (FERC) would use in its review of an eventual license application for the continued operation of the Lee Vining Hydroelectric Project. Prior to the meetings, an overview of the FERC NEPA process was provided via a memorandum (Attachment A), and TWG participants were asked to use the format described to propose appropriate studies. During discussion with the TWG, members suggested that the studies that were agreed-to as part of the nearby Bishop Creek (FERC No. 1394) could serve as a starting point in identifying studies for Lee Vining. This memorandum provides a summary of Bishop Creek studies and provides a template for identifying which studies could be applied to Lee Vining Creek.

INSTRUCTIONS

1. Please review the approved [technical study plan for Bishop Creek](#). SCE does not believe that all of these studies are appropriate for Lee Vining but is seeking TWG input.
2. Indicate in the spaces provided in Table 1 if you believe the study is applicable to the relicensing of the Lee Vining Hydroelectric Project.
3. If you believe the study is applicable, please provide commentary in the blank cells of Table 1 on project specific considerations of:
 - a. Goals and Objectives
 - b. Relevant Resource Management Goals and Public Interest Considerations
 - c. Project Nexus
 - d. Study Area
 - e. Methods
 - f. Availability and applicability of project specific information
4. If there is a study that is not represented by the Bishop Creek process that you believe is warranted, and consistent with the study criteria that was distributed, please use the template (Attachment B) to provide SCE with the necessary information to evaluate.

KEY TOPICS DISCUSSED DURING AQUATICS TWG 1

Meeting notes are being developed for the TWGs conducted the week of January 25, 2021 and will be distributed soon; however, a summary of key topics discussed are provided here:

- Instream flows, peak flows
- Operations model with daily and sub-daily data
- Studies already done and recommendations that already exist (e.g., LADWP flows)
- Mass wasting on Tioga Road
- General erosion and sedimentation
- Shift from brook to brown trout
- *Didymo* presence
- E.coli rather than fecal coliform
- Recreation as it relates to water quality and fish studies

Table 1. Bishop Creek Relicensing Studies and their Applicability to Lee Vining Creek Relicensing

Study Title: TERR 1 – Assessment of Bishop Creek Riparian Community	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 2 – Invasive Plants	
Applicable to Lee Vining? (Yes/No):	Yes- should include sub unit on Didymo
Goals and Objectives (Lee Vining Specific):	Determine extent of Didymo infestation and impact of instream flow regime
Relevant Resource Management Goals of agencies or tribes (include source):	CDFA Noxious weed program CDFG wetland policy and wild trout policy
Nexus to Proposed Project Operations (Rationale):	Instream flows impact abiotic conditions for Didymo
Describe Study Area relative to FERC Boundary:	Streams located below project reservoirs

Describe Methods (if different from Bishop Creek):	TBD
Other Considerations (example existing information/available reports):	
Study Title: TERR 3 – Assessment of Special Status Plants	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 4 – Wildlife	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: Instream Habitat Assessment	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Determine viability of aquatic habitat below reservoirs for self-sustaining trout production -Assess habitat conditions/suitability for trout (overall viability)

	-Determine operational constraints around trout spawning periods (to be sure we're not doing large flow releases during spawning)
Relevant Resource Management Goals of agencies or tribes (include source):	CDFG's wild trout policy and the 2004 Strategic Plan for Trout Management
Nexus to Proposed Project Operations (Rationale):	Reservoir releases impact downstream habitats
Describe Study Area relative to FERC Boundary:	Streams within the project area
Describe Methods (if different from Bishop Creek):	Qualitative methods are acceptable instead of quantitative flow modeling if reaches are too steep Look back on other methods used in Bishop for steeper reaches
Other Considerations (example existing information/available reports):	
Study Title: AQ 2 – Operations Model	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: Fish Distribution Baseline Study	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Evaluate existing trout fishery (size distribution, density, growth, etc) in order to inform recommendations for reservoir and stream management
Relevant Resource Management Goals of agencies or tribes (include source):	Per CDFW Strategic Trout Plan as well as CDFW Commission Policy, CDFW will management for sustainable trout fishing where possible
Nexus to Proposed Project Operations (Rationale):	Project impacts reservoir management and instream flows
Describe Study Area relative to FERC Boundary:	Lakes and streams within project area

Describe Methods (if different from Bishop Creek):	Repeat of existing methodology for comparability plus gill nets (or similar) in reservoirs
Other Considerations (example existing information/available reports):	CDFW has monitoring data from 2014/2015; relicensing team has data 1990s-2016. What work is currently planned for the 2021 survey season?
Study Title: AQ 4 –Baseline Fish Distribution Study (Reservoirs)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Evaluate existing trout fishery in order to inform recommendations for reservoir and stream management
Relevant Resource Management Goals of agencies or tribes (include source):	Per CDFW Strategic Trout Plan as well as CDFG Commission Policy, CDFW will management for sustainable trout fishing where possible
Nexus to Proposed Project Operations (Rationale):	Project impacts reservoir management and instream flows
Describe Study Area relative to FERC Boundary:	Lakes and streams within project area
Describe Methods (if different from Bishop Creek):	N/A
Other Considerations (example existing information/available reports):	N/A
Study Title: AQ 5 – Water Quality	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	Establishing baseline
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	Reservoir stage impacting stratification; management potentially impacting nutrient concentration
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	DO, Turbitidy, etc. Standard WQ parameters. Profiles in reservoirs for potential nutrient concentration (algal blooms downstream);
Other Considerations (example existing information/available reports):	Nick to send data set (and review data from Adam). Continue discussion relating to recreation and WQ as well.
Study Title: AQ 6 – Sediment and Geomorphology	
Applicable to Lee Vining? (Yes/No):	Yes

Goals and Objectives (Lee Vining Specific):	Determine sediment flux to inform alluvial reach -Is the sediment there being lost within the system -is there an efficient way to move sediment to make it available for downstream reaches of the project.
Relevant Resource Management Goals of agencies or tribes (include source):	Restore ecosystem function to alluvial reaches; ensure adequate spawning gravels for salmonids in project area. CDFG Commission Wild Trout Policy.
Nexus to Proposed Project Operations (Rationale):	Reservoirs act as sediment traps, preventing fine sediment from reaching downstream reaches
Describe Study Area relative to FERC Boundary:	All streams in project area
Describe Methods (if different from Bishop Creek):	What sediment is currently there, overall D ₅₀ values;
Other Considerations (example existing information/available reports):	Greg to send studies over if different from what relicensing team has collected.
Study Title:	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	The goal of the study is to determine how to achieve the desired peak flow recurrence intervals;
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title:	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	

Other Considerations (example existing information/available reports):	
Study Title: REC 1 – Recreation Use and Needs	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: REC 2 – Recreation Facilities Condition and Public Accessibility	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: LAND 1 – Project Boundary and Lands	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	

Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: CUL 1 – Cultural Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: CUL 2 – Tribal Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

MEMORANDUM

TO: Federal Energy Regulatory Commission
Docket P-1388

FROM: Lee Vining Relicensing Team

CC: Technical Work Groups
FERC Distribution List

DATE: July 27, 2020

RE: Lee Vining Relicensing Study Titles

INTRODUCTION

During the week of January 25, 2021 the Technical Working Groups (TWG) for the Lee Vining Relicensing met to discuss the National Environmental Policy Act (NEPA) process that the Federal Energy Regulatory Commission (FERC) would use in its review of an eventual license application for the continued operation of the Lee Vining Hydroelectric Project. Prior to the meetings, an overview of the FERC NEPA process was provided via a memorandum (Attachment A), and TWG participants were asked to use the format described to propose appropriate studies. During discussion with the TWG, members suggested that the studies that were agreed-to as part of the nearby Bishop Creek (FERC No. 1394) could serve as a starting point in identifying studies for Lee Vining. This memorandum provides a summary of Bishop Creek studies and provides a template for identifying which studies could be applied to Lee Vining Creek.

INSTRUCTIONS

1. Please review the approved [technical study plan for Bishop Creek](#). SCE does not believe that all of these studies are appropriate for Lee Vining but are seeking TWG input.
2. Indicate in the spaces provided in Table 1 if you believe the study is applicable to the relicensing of the Lee Vining Hydroelectric Project.
3. If you believe the study is applicable, please provide commentary in the blank cells of Table 1 on project specific considerations of:
 - a. Goals and Objectives
 - b. Relevant Resource Management Goals and Public Interest Considerations
 - c. Project Nexus
 - d. Study Area
 - e. Methods
 - f. Availability and applicability of project specific information
4. If there is a study that is not represented by the Bishop Creek process that you believe is warranted, and consistent with the study criteria that was distributed, please use the template (Attachment B) to provide SCE with the necessary information to evaluate.

KEY TOPICS DISCUSSED DURING TERRESTRIAL AND BOTANICAL TWG 1

Meeting notes are being developed for the TWGs conducted the week of January 25, 2021 and will be distributed soon; however, a summary of key topics discussed are provided here:

- *Didymo* infestation (also being discussed in Aquatics TWG)
 - Eurasian milfoil, all other aquatic invasive species
 - Listed species (e.g., Yosemite toad)
 - Proposed threatened species whitebark pine
 - Two studies currently being considered: Wildlife and Botanical
-

Table 1. Bishop Creek Relicensing Studies and their Applicability to Lee Vining Creek Relicensing

Study Title: TERR 1 – Assessment of Riparian Community (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes/TBD
Goals and Objectives (Lee Vining Specific):	<ul style="list-style-type: none"> • Characterize the riparian community using the long-term monitoring dataset generated from monitoring conducted in compliance with the existing license in terms of the goals and objectives of riparian ecosystem health contained in the Land Management Plan for the Inyo National Forest (USDA 2018) • Review and assess black cottonwood abundance and determine whether the decline observed in 2014 (baseline) is within a natural range of variability or could be related to Project operations (depending on if we are seeing a decline in black cottonwood’s in Lee Vining). • Ensure that future Project facilities and operations are consistent with the Desired Conditions described in the Land Management Plan for the Inyo National Forest (USDA 2018) as they relate to ecological sustainability and diversity of plant and animal communities.
Relevant Resource Management Goals of agencies or tribes (include source):	<ul style="list-style-type: none"> • Fish and Game Code section 1801 • Fish and Game Code section 1802 • Land Management Plan for the Inyo National Forest
Nexus to Proposed Project Operations (Rationale):	<ul style="list-style-type: none"> • Project operations may potentially affect the riparian community in Lee Vining Creek and Glacier Creek below each reservoir depending on the amount, duration and timing of flow.
Describe Study Area relative to FERC Boundary:	<ul style="list-style-type: none"> • The existing riparian corridors within the FERC Project boundary.
Describe Methods (if different from Bishop Creek):	<ul style="list-style-type: none"> • Utilize existing protocols described in the
Other Considerations (example existing information/available reports):	Current monitoring sites (3 sites with 4 transects each) are upper reaches of the Project; potential consideration for transects in lower reaches, specifically below the dams.
Study Title: TERR 2 – Invasive Plants (CDFW request 1)	
Applicable to Lee Vining? (Yes/No):	Yes – Didymo (see Aquatics TWG)
Goals and Objectives (Lee Vining Specific):	Please refer to CDFW’s Aquatic Assessment of Bishop Creek

Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 2 – Invasive Plants (CDFW request 2)	
Applicable to Lee Vining? (Yes/No):	Yes- should include sub unit on Didymo
Goals and Objectives (Lee Vining Specific):	Determine extent of Didymo infestation and impact of instream flow regime
Relevant Resource Management Goals of agencies or tribes (include source):	CDFWA Noxious weed program CDFG wetland policy and wild trout policy
Nexus to Proposed Project Operations (Rationale):	Instream flows impact abiotic conditions for Didymo
Describe Study Area relative to FERC Boundary:	Streams located below project reservoirs
Describe Methods (if different from Bishop Creek):	TBD
Other Considerations (example existing information/available reports):	
Study Title: TERR 2 – Invasive Plants (USFS 2018 Bishop notes)	
	<ul style="list-style-type: none"> Consider including recreation sites as they are also being assessed for condition, accessibility, need for upgrades. Consider including areas of dispersed recreation in the study area.

	<ul style="list-style-type: none"> • Since the study area is point-specific with buffers, it will not currently answer the question about the extent of Robinia along Bishop Creek. Include an inventory along the creek to document the current extent of Robinia and understand relationship of distribution to project facilities. (Survey for cottonwood distribution could occur concurrently along the stream corridor). • Need to consider Cal-IPC ratings, CDFA ratings, INF species prioritization- not just go with Cal-IPC ratings.
Study Title: TERR 3 – Assessment of Special Status Plants (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	<ul style="list-style-type: none"> • Classify and map the existing distribution of special status plants (including aquatic plants) in the Project area and Project affected reaches • Assess the extent to which the Project may affect rare, threatened, endangered, proposed threatened or endangered (e.g. whitebark pine) or other special status species • Ensure that future Project facilities and operations are consistent with the Desired Conditions, Goals and Standards described for animal and plant species in the Land Management Plan for the Inyo National Forest (USDA 2018).
Relevant Resource Management Goals of agencies or tribes (include source):	<ul style="list-style-type: none"> • Land Management Plan for the Inyo National Forest
Nexus to Proposed Project Operations (Rationale):	<ul style="list-style-type: none"> • While there is minimal proposed changes to the Project operations, some species were recognized as having special status after the existing license was issued.
Describe Study Area relative to FERC Boundary:	FERC Project boundary and a 500-foot survey area buffer
Describe Methods (if different from Bishop Creek):	<ul style="list-style-type: none"> • Supplement preliminary list and map of occurrences with additional lists provided by CDFW and USFS. • Field surveys
Other Considerations (example existing information/available reports):	
Study Title: TERR 3 – Assessment of Special Status Plants (USFS 2018 Bishop notes)	

	<ul style="list-style-type: none"> • Consider renaming “Special Status” Plants Study since the forest service will no longer use the term “Sensitive” after Forest Plan is revised. • Consider including recreation sites in the study area as they are also being assessed for condition, accessibility, need for upgrades. Consider including areas of dispersed recreation in the study area. • Conduct a field survey of project facilities and recreation sites to determine current distribution of special status plants in the project area (this would be in 2020 when new forest plan is likely in place- bigger list of target species than previously considered or surveyed for).
Study Title: TERR XX – Cottonwood Study (USFS 2018 Bishop notes) ?	
Goals and Objectives (Lee Vining Specific):	Study goal- what is the current extent and condition of cottonwood along Bishop Creek, how much recruitment is occurring and where, is there a relationship to project operations, or other project-related disturbance (e.g. dispersed recreation/fishing access)
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	Project nexus- Analysis of the 5-year riparian monitoring results indicated a possible decline and lack of recruitment for black cottonwood, not anecdotal observations by agencies...
Describe Study Area relative to FERC Boundary:	Study area- lands within the current boundary and portions of creeks affected by the project operations where potential habitat for cottonwood exists
Describe Methods (if different from Bishop Creek):	Methods- review existing monitoring data including 2019 data for quantitative trends in abundance, recruitment and mortality; field inventory to determine extent of cottonwood, age classes and impacts from recreation
Other Considerations (example existing information/available reports):	
Study Title: TERR 4 – Wildlife (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes

Goals and Objectives (Lee Vining Specific):	Same as Bishop Creek
Relevant Resource Management Goals of agencies or tribes (include source):	<ul style="list-style-type: none"> • Inyo National Forest (USDA 2018) • Fish and Game Code section 4900
Nexus to Proposed Project Operations (Rationale):	<ul style="list-style-type: none"> • Relicensing is an appropriate time to examine wildlife presence in and around the Project and the Project vicinity to determine the effects of Project operations to wildlife in the context of the most recent USFS Management Plan, the federal and state Endangered Species Acts (ESA), the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA)
Describe Study Area relative to FERC Boundary:	The entire FERC Project boundary and 500-foot buffer.
Describe Methods (if different from Bishop Creek):	<ul style="list-style-type: none"> • Literature Review • Field Surveys • General Wildlife • Willow Flycatcher Nesting Habitat Assessment (included in general survey) • Riparian bird study (described in separate study proposal) • Management Indicator Species • Mule Deer • Field Surveys • Potential Big Horn Sheep (Alyssa to follow up) • Northern Goshawk • Acoustic Bat Habitat Assessment and Surveys No current known occurrences of bats • Amphibian Surveys + Focused VES surveys and mark-recapture for Yosemite Toad (described in separate study proposal)
Other Considerations (example existing information/available reports):	
Study Title: TERR 4 – Wildlife (USFS request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Study goals and objectives from Bishop Creek are all relevant to Lee Vining.

Relevant Resource Management Goals of agencies or tribes (include source):	<p>1) SPEC-FW-STD-1 Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species.</p> <p>2) SPEC-FW-DC 03 Land management activities are designed to maintain self-sustaining populations of at-risk species within the inherent capabilities of the plan area by considering the relationship of threats (including site-specific threats) and activities to species survival and reproduction.</p> <p>TERR-FW-DC-6 The national forest provides high quality hunting and fishing opportunities. Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities.</p>
Nexus to Proposed Project Operations (Rationale):	At-risk species range overlaps with the project boundary. Project activities, facilities, and associated environments (both altered and unaltered) contribute to at-risk species survival and reproduction.
Describe Study Area relative to FERC Boundary:	The study area described in the Bishop Creek Study plan is relevant to LV. Include surrounding cliff sides for nesting raptors.
Describe Methods (if different from Bishop Creek):	All Bishop Creek methods are relevant with the exception of MIS. Include: Bald and Golden eagle, peregrine falcon specific studies/data review? Meso carnivore camera survey (can provide specific protocol).
Other Considerations (example existing information/available reports):	Bring up Calcium testing in water reservoirs to determine potential habitat for aquatic invasive mussels. ESA species determinations need to be considered.
Study Title: TERR XX – Yosemite Toad (CDFW new request)	
Goals and Objectives (Lee Vining Specific):	<p>Goal 1: Determine current (<10 years) baseline distribution (presence/absence) and population characteristics of YOTO within the FERC Project boundary and an appropriate buffer. *Suggested buffer of 100 feet in elevation up inlets.</p> <ul style="list-style-type: none"> • Objective 1: Survey, using VES (visual encounter surveys), each lakes perimeter and all suitable habitat types for all life stages (i.e., egg mass, tadpole, recent metamorphs and adult) of YOTO throughout the FERC Project boundary and an appropriate buffer including, wet meadows, small ponds, shallow spring channels, side channels, sloughs, and adjacent upland habitat. • Objective 2: determine critical breeding meadow breeding habitat locations • Objective 3: document the baseline composition of YOTO live stages

Goal 2: Determine how existing operations are impacting YOTO populations and habitat.

- Objective 1: USE ArcGIS to map the baseline distribution of YOTO and their associated habitat using data gathered during baseline surveys and from existing sources CDFW maps of data collected between 2000-2020 (Tioga and Saddlebag Lakes maps)).
- Objective 2. Use existing data on Project operations (e.g., flow release timing, flow magnitude, reservoir level, water temperature changes and water chemistry) and known or observed habitat requirements of YOTO to determine if Project operations could result in detrimental impacts to the existing YOTO population and how to mitigate those impacts.
- Objective 3: Use the gathered baseline data and existing data to determine if there are any Project facilities (e.g., structures and roads) that prevent or impede the movement of YOTO from breeding wet meadow habitat to terrestrial habitat.
- Objective 4: Determine YOTO habitat areas that could be impacted by recreational activities such as fishing, hiking, and biking. Inlet areas of all three named lakes may harbor toad larvae in spring and be impacted by hikers, bikers and fishermen wading the stream to cross. Biking would be considered the most impactful due to the speed (visual inability to locate) and inability to avoid egg masses or larvae.

Goal 3: Determine if Bd (Batrachochytrium dendrobatidis-fungus that causes Chytridiomycosis) is present in the Yosemite Toad population.

- Objective 1: Collect epithelial swabs from adult Yosemite Toads for qPCR analysis to determine if Bd is present in the Yosemite Toads within the project area.

Goal 4: Determine how existing and long-term operations may impact use of annual breeding areas and long-term survival of Yosemite Toads within the project area for the duration of the new license period.

- Objective 1: Conduct a 5-year Capture-Mark-Recapture study (CMR) at two breeding locations identified in Goal 1. *(Potentially one at Tioga Lake and one at Saddlebag Lake).
- Objective 2: Continue CMR surveys every other year at the previous locations to gather data on the long-term use of sites, site fidelity and population trend.

<p>Relevant Resource Management Goals of agencies or tribes (include source):</p>	<p>The YOTO is listed as a threatened species under the California Endangered Species Act. Section 2051 (c.) of the Fish and Game Code states that “These species of fish, wildlife, and plants are of ecological, educational, historical, recreational, esthetic, economic, and scientific value to the people of this state, and the conservation, protection, and enhancement of these species and their habitat is of statewide concern.”</p>
<p>Nexus to Proposed Project Operations (Rationale):</p>	<p>There is documentation of YOTO within and adjacent to the FERC Project boundary (CDFW HML Database) but the current distribution and characteristics of the existing YOTO populations are not know. Additionally, the entire FERC Project boundary upstream of Ellery Lake (including Ellery Lake) is designated by the United States Fish and Wildlife Service as critical habitat for YOTO. Their dependence on aquatic systems makes them vulnerable to Project operations such as flow release timing, flow release magnitude, reservoir level, and recreation. These impacts could vary depending on YOTO life stage, time of year and location. For example, if YOTO are found to exist along the periphery of a reservoir, increasing of lowering the reservoir level could eliminate habitat. Additionally, increased recreational activities as a result of the creation of the reservoir could have direct impacts (e.g., crushing) or indirect (e.g., YOTO avoidance of suitable habitat because of human presence/recreational activities) impacts on YOTO populations.</p>
<p>Describe Study Area relative to FERC Boundary:</p>	
<p>Describe Methods (if different from Bishop Creek):</p>	<p>Method 1: Visual Encounter Surveys (VES)</p> <ul style="list-style-type: none"> • Conduct focused single pass VES for YOTO egg masses, tadpoles, recent metamorphose and adults following a standard Sierra, YOTO survey protocol • GPS locations where toads are found, document the life stage and characterize habitat as: stream, meadow, fringing habitat, pond (ephemeral/perennial) or lake (in this instance lake equals 1 of 3 named lakes). • YOTO would not be captured or disturbed unless the surveyor was permitted to do so (handling for identification may be permitted). • Survey Timing: YOTO breeding starts in late spring just after snowmelt when adults congregate at seasonal pools, shallow water, the margins of lakes and ponds, and slow-moving streams often associate with meadows. Larvae develop within weeks in ephemeral aquatic habitat and metamorphic toads emerge onto surrounding meadow habitat for cover and foraging.

	<p>Method 2: Epithelial Bd swabs.</p> <ul style="list-style-type: none"> Collect DNA skin samples from ~20 adult Yosemite Toads by epithelial swab. Follow protocol developed by C. Briggs and modified by SNARL for swabbing technique. Swabs will be analyzed using qPCR to detect Bd DNA. <p>Method 3: Capture-Mark-Recapture.</p> <ul style="list-style-type: none"> Conduct annual CMR surveys during the breeding season for the first five years to determine habitat use, reproductive success, population size, site fecundity and population size estimates for the project area. Continue CMR surveys every other year after the first five to monitor the populations over the long-term during operations within the FERC project area.
<p>Other Considerations (example existing information/available reports):</p>	<p>Brown, C., M. P. Hayes, G. A. Green, D. C. Macfarlane, and A. J. Lind. 2015. Yosemite Toad Conservation Assessment. R5-TP-040.</p> <p>Hicham, C. (2016, Oct. 24). Yosemite Toad -Final Critical Habitat-USFWS [ds1130]. Calif. Dept. of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Retrieved February 1, 2021 from http://bios.dfg.ca.gov.</p> <p>Morton, M. L. and M. E. Pereyra. 2010. Habitat Use by Yosemite Toads: Life History Traits and Implications for Conservation. <i>Herpetological Conservation and Biology</i> 5(3):388-394. <u>Steve will locate and send out report by UCSB</u> <u>Tom and Alyssa to coordinate with Jim on translocation plan and share plan if possible.</u></p>
<p>Study Title: TERR XX – Focal General Riparian Birds (CDFW new request)</p>	
<p>Goals and Objectives (Lee Vining Specific):</p>	<ul style="list-style-type: none"> Determine baseline riparian bird species composition, distribution and breeding status. <ul style="list-style-type: none"> Conduct point count surveys along all reaches impacted by Project operations. Determine baseline riparian habitat conditions as it relates to riparian bird habitat needs <ul style="list-style-type: none"> Conduct vegetation assessments at each point count census station Determine if there have been changes to the riparian community that could impact habitat suitability for focal riparian bird species <ul style="list-style-type: none"> Use aerial imagery and the long-term monitoring data set generated from SCE monitoring conducted in compliance with the existing license to determine if there are significant changes (e.g., species composition, stand structure, riparian corridor width, etc.) to the riparian community.

Relevant Resource Management Goals of agencies or tribes (include source):	Fish and Game Code section 1801 and 1802
Nexus to Proposed Project Operations (Rationale):	The establishment and succession of native riparian vegetation rely upon a natural hydrology in the river system and provide essential habitat for many riparian-associated birds. Interruptions of these processes, including dams, levees, and water diversion, have significantly contributed to the decrease in riparian habitat (e.g. two-tiered riparian habitat) and the consequent decline in songbird populations. The flow regime implemented by the Project can impact the native riparian vegetation and therefore the riparian-associated species that rely on it.
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	<p><u>Point Count Census:</u> 5 minutes 50 m fixed radius point counts following standards recommended by Ralph et al. (1993, 1995). Conducted during the peak breeding season, May 15 to July 10. All stations censused three times each season by field biologist familiar with the songs and calls of birds in the areas, and trained in distance estimation. Censuses conducted from within 30 minutes after local sunrise until approximately 3 hours later. Detections categorized as song, call or visual and all breeding observations recorded.</p> <p><u>Point Count Vegetation Assessment:</u> conduct vegetation assessments at each point count census station. Use Relevé method described by Ralph et al. (1993) to estimate percent cover by height category for every species of plant located within 50 m of point count stations, estimate the riparian width and estimate the percent of the 50 m radius census areas that consists of riparian plants. Height categories include: “herb” (0-0.5m), “shrub” (0.5 – 5m), and “tree” (>5m, >8 cm DBH).</p> <p><u>Aerial imagery:</u> use historical infrared imagery to determine if there has been any changes to the riparian community.</p>
Other Considerations (example existing information/available reports):	Heath, S. K, G. Ballard and C. McCreedy. 2001. Eastern Sierra Riparian Songbird Conservation 1998-200 Final Report & Mono Basin 2000 Progress Report

	<p>Ralph, C. J., G. R. Geupel, P. Pyle, T. E. Martin, and D. F. Desante. 1993. Field Methods for Monitoring Landbirds. USDA Forest Service Publication: PSW-GTR 144, Albany, CA.</p> <p>Ralph, C. J, S. Droege and J. R. Sauer. 1995. Managing and Monitoring Birds using Point Counts: Standards and Applications (in) Monitoring Bird Populations by Point Counts. USDA Forest Service General Technical Report: PSW-GTR-149. 181 pp</p>
Study Title: AQ 1 – Instream Flow Needs and Assessment (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Please refer to CDFW’s Aquatic Assessment of Bishop Creek
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 2 – Operations Model (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	TBD
Relevant Resource Management Goals of agencies or tribes (include source):	

Nexus to Proposed Project Operations (Rationale):		
Describe Study Area relative to FERC Boundary:		
Describe Methods (if different from Bishop Creek):		
Other Considerations (example existing information/available reports):		
Study Title: AQ 3 – Fish Distribution Baseline Study (Creek) (CDFW request)		
Applicable to Lee Vining? (Yes/No):	Yes	
Goals and Objectives (Lee Vining Specific):	Please refer to CDFW’s Aquatic Assessment of Bishop Creek	
Relevant Resource Management Goals of agencies or tribes (include source):		
Nexus to Proposed Project Operations (Rationale):		
Describe Study Area relative to FERC Boundary:		
Describe Methods (if different from Bishop Creek):		
Other Considerations (example existing information/available reports):		
Study Title: AQ 4 –Baseline Fish Distribution Study (Reservoirs) (CDFW request)		
Applicable to Lee Vining? (Yes/No):		Yes
Goals and Objectives (Lee Vining Specific):	Please refer to CDFW’s Aquatic Assessment of Bishop Creek	
Relevant Resource Management Goals of agencies or tribes (include source):		

Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 5 – Water Quality (CDFW request)	
Applicable to Lee Vining? (Yes/No):	NA; SWWRCB authority
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 6 – Sediment and Geomorphology (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	Please refer to CDFW’s Aquatic Assessment of Bishop Creek
Relevant Resource Management Goals of agencies or tribes (include source):	

Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: REC 1 – Recreation Use and Needs (CDFW request)	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: REC 2 – Recreation Facilities Condition and Public Accessibility	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	

Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: LAND 1 – Project Boundary and Lands	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: CUL 1 – Cultural Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	

Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: CUL 2 – Tribal Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Lee Vining Relicensing Study Request Template

The template below is provided for your convenience, and will help the Relicensing Team incorporate additional requests for information. The guidance comes from the Federal Energy Regulatory Commission (FERC) “Guide to Understanding and Applying the Integrated Licensing Process Study Criteria” (available at www.ferc.gov and attached here). These criteria represent FERC’s effort to ensure that the information needs are known before a license application is filed through a FERC-approved study plan. The approved study plan brings, to the extent possible, pre-filing finality to the identification of the information and studies needed for FERC staff to prepare its environmental document and for participants to make recommendations and provide terms and conditions.

Requestor Name:	Nick Buckmaster
Agency /Affiliation:	CDFW
Primary Resource Area:	Fisheries
Proposed Study Title:	Lee Vining Creel Census

1. Study goals and objectives

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

Estimate the current recreational fishing effort in Lee Vining Creek (around campgrounds but mostly concerned with the lakes). Also determine desired future conditions

2. Relevant Resource Management Goals and Public Interest Considerations

18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

CDFG’s Strategic Trout Management Plan

18 CFR §5.9(b)(3): If the requester is a not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

N/A

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

N/A

4. Project Nexus

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

Project includes several reservoirs, which have become popular recreational fisheries that CDFW is responsible for managing.

5. Methods

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

Creel sampling should follow the standard protocols published in *Fisheries Techniques (3rd Addition)* (American Fisheries Society Publication).

6. Level of Effort and Cost

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

MEMORANDUM

TO: Federal Energy Regulatory Commission
Docket P-1388

FROM: Lee Vining Relicensing Team

CC: Technical Work Groups
FERC Distribution List

DATE: July 27, 2020

RE: Lee Vining Relicensing Study Titles

INTRODUCTION

During the week of January 25, 2021 the Technical Working Groups (TWG) for the Lee Vining Relicensing met to discuss the National Environmental Policy Act (NEPA) process that the Federal Energy Regulatory Commission (FERC) would use in its review of an eventual license application for the continued operation of the Lee Vining Hydroelectric Project. Prior to the meetings, an overview of the FERC NEPA process was provided via a memorandum (Attachment A), and TWG participants were asked to use the format described to propose appropriate studies. During discussion with the TWG, members suggested that the studies that were agreed-to as part of the nearby Bishop Creek (FERC No. 1394) could serve as a starting point in identifying studies for Lee Vining. This memorandum provides a summary of Bishop Creek studies and provides a template for identifying which studies could be applied to Lee Vining Creek.

INSTRUCTIONS

1. Please review the approved [technical study plan for Bishop Creek](#). SCE does not believe that all of these studies are appropriate for Lee Vining but are seeking TWG input.
2. Indicate in the spaces provided in Table 1 if you believe the study is applicable to the relicensing of the Lee Vining Hydroelectric Project.
3. If you believe the study is applicable, please provide commentary in the blank cells of Table 1 on project specific considerations of:
 - a. Goals and Objectives
 - b. Relevant Resource Management Goals and Public Interest Considerations
 - c. Project Nexus
 - d. Study Area
 - e. Methods
 - f. Availability and applicability of project specific information
4. If there is a study that is not represented by the Bishop Creek process that you believe is warranted, and consistent with the study criteria that was distributed, please use the template (Attachment B) to provide SCE with the necessary information to evaluate.

KEY TOPICS DISCUSSED DURING RECREATION AND LAND USE TWG 1

Meeting notes are being developed for the TWGs conducted the week of January 25, 2021 and will be distributed soon; however, a summary of key topics discussed are provided here:

- Project recreational facilities – what should be in and what is out
- Trails – impacts on sensitive species; historic origin of trails/access points; access
- Project roads and pull outs – what are project related and how should they be managed
- Fishing level of effort and use data in reservoirs (creel) – less concern for creeks
- Project boundary
- Access to ice-climbing sites on Lee Vining Creek below Rhinedollar Dam
- Special Use Permits
- How is the area used by different groups to understand impacts or future use
- Condition of structures and accessibility
- Conflicts between instream flow requirements and lake levels at Saddlebag Lake (SUPs taxi service)

Table 1. Bishop Creek Relicensing Studies and their Applicability to Lee Vining Creek Relicensing

Study Title: TERR 1 – Assessment of Bishop Creek Riparian Community	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 2 – Invasive Plants	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	

Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 3 – Assessment of Special Status Plants	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: TERR 4 – Wildlife	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 1 – Instream Flow Needs and Assessment	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	

Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 2 – Operations Model	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 3 – Fish Distribution Baseline Study (Creek)	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	
Study Title: AQ 4 – Baseline Fish Distribution Study (Reservoirs)	

Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Study Title: AQ 5 – Water Quality

Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Study Title: AQ 6 – Sediment and Geomorphology

Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	

Other Considerations (example existing information/available reports):	
Study Title: REC 1 – Recreation Use and Needs	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	<p>In addition to Goals and Objectives from Bishop Creek, include the following objectives specific to locations in the vicinity of the Lee Vining project:</p> <p>Evaluate recreation use of lower Lee Vining canyon campgrounds (Big Bend, Aspen, Moraine, Lower Lee Vining, Cattleguard) to determine dependence of users on project stream flows and project reservoirs.</p> <p>Evaluate public use of recreation facilities, trails, and dispersed camping surrounding Saddlebag Lake and along the Saddlebag Lake access road including backpacking and camping use at the north end of the lake.</p> <p>Evaluate public education needs for areas closed to dispersed camping.</p> <p>Include use of Saddlebag Lake water taxi service in study analysis.</p> <p>Include the following site-specific recreation activities in the study design: Ellery Lake access to Ellery Bowl for backcountry skiing and climbing. Kayaking at all lakes and the need for put-in development. Dispersed camping around Ellery outlet and waterfall. Ice climbing use on Poole Powerplant Rd which is plowed during winter for plant access.</p>
Relevant Resource Management Goals of agencies or tribes (include source):	Same. Use final Inyo NF Land Management Plan 2019
Nexus to Proposed Project Operations (Rationale):	The proposed project includes the Poole Power Plant Road which was likely built as part of the creation of the Lee Vining hydropower project. The new road provided additional access to Lee Vining creek and opened a new area of the Inyo NF to recreation development including Big Bend, Aspen, and Moraine campgrounds. The Lower Lee Vining and Cattleguard campgrounds may also have a nexus to the proposed project if this study finds that a significant portion of campground users stay here in order to recreate in the project vicinity, such as fishing at Tioga, Ellery, or Saddlebag Lakes. In

	<p>addition, there is likely a nexus to recreation facilities on the Saddlebag Lake road which provides easy access to Saddlebag group camp, campground, trailheads, picnic area, boat ramp, Sawmill campground, and Gardisky Lake trailhead. Many of these facilities depend directly on the existing lake and the other facilities depend on the presence of the road. There is also a nexus to recreation facilities in the vicinity of Tioga and Ellery lakes including Ellery Lake Campground, Tioga Lake Campground, and Tioga Lake overlook/Glacier Canyon trailhead. These facilities were built after the proposed project and located in relationship to the project reservoirs in order to provide for their use by the public.</p>
Describe Study Area relative to FERC Boundary:	<p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake.</p> <p>NFS trails: Saddlebag Lk trail, Glacier Canyon trail</p> <p>User-created trails: trails around project lakes and along creeks</p>
Describe Methods (if different from Bishop Creek):	<p>Same.</p> <p>Include assessment of winter recreation activities.</p> <p>Traffic counter locations: TBD</p> <p>Trail counter locations: TBD</p>
Other Considerations (example existing information/available reports):	Same
Study Title: REC 2 – Recreation Facilities Condition and Public Accessibility	
Applicable to Lee Vining? (Yes/No):	Yes
Goals and Objectives (Lee Vining Specific):	<p>Same as Bishop Creek as stated at 4.2.2.</p> <p>And the following site-specific objectives:</p> <p>Develop recreation facility operations, maintenance, and accessibility needs for the same sites identified in REC1 above.</p> <p>Include assessment of: condition of gates on access roads, need for control of public vehicle access to</p>

	<p>Saddlebag lakebed, campground water systems condition and adequacy, sign inventory, need for interpretive signage, need for paving of Saddlebag Rd, road drainage improvements, road pullout improvements, rehabilitation of area around Saddlebag dam, fishing line disposal stations, litter disposal need, vehicle intrusion near Ellery Lake, need for paving Ellery Lake parking lot, campground toilet capacity, need for paving Poole Powerhouse Rd to reduce sediment runoff to Lee Vining Creek, and opportunity for expansion of campgrounds.</p> <p>Evaluate the relationship between flood damage to campgrounds in lower Lee Vining Canyon and project operations.</p>
Relevant Resource Management Goals of agencies or tribes (include source):	Same. Use final Inyo NF Land Management Plan 2019
Nexus to Proposed Project Operations (Rationale):	Same as Bishop Cr study plan and REC1 above?
Describe Study Area relative to FERC Boundary:	Same as REC1 above
Describe Methods (if different from Bishop Creek):	Same
Other Considerations (example existing information/available reports):	Same
Study Title: LAND 1 – Project Boundary and Lands	
Applicable to Lee Vining? (Yes/No):	Yes

Goals and Objectives (Lee Vining Specific):	<p>Provide historic context for recreation facility development and hydropower facility development including an analysis of the timeline and location of recreation facilities in relationship to project reservoirs. For example, the construction of Big Bend, Aspen, and Moraine campgrounds after the construction of the Poole Power Plant road.</p> <p>Determine project-dependent recreation facilities including access roads such as Poole Power Plant road and Saddlebag Lake road.</p> <p>Assess needs and location options for staging areas, materials storage sites, and use of borrow pits.</p> <p>Revise project overview map to correct Hoover Wilderness boundary on E side of Ellery Lk, Label Tioga Campground on map.</p>
Relevant Resource Management Goals of agencies or tribes (include source):	Same. Use final Inyo NF Land Management Plan 2019
Nexus to Proposed Project Operations (Rationale):	Same as described in REC1 above
Describe Study Area relative to FERC Boundary:	Same as REC1
Describe Methods (if different from Bishop Creek):	Same
Other Considerations (example existing information/available reports):	Same.
Study Title: CUL 1 – Cultural Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Study Title: CUL 2 – Tribal Resources	
Applicable to Lee Vining? (Yes/No):	
Goals and Objectives (Lee Vining Specific):	
Relevant Resource Management Goals of agencies or tribes (include source):	
Nexus to Proposed Project Operations (Rationale):	
Describe Study Area relative to FERC Boundary:	
Describe Methods (if different from Bishop Creek):	
Other Considerations (example existing information/available reports):	

Lee Vining Relicensing Study Request Template

The template below is provided for your convenience, and will help the Relicensing Team incorporate additional requests for information. The guidance comes from the Federal Energy Regulatory Commission (FERC) “Guide to Understanding and Applying the Integrated Licensing Process Study Criteria” (available at www.ferc.gov and attached here). These criteria represent FERC’s effort to ensure that the information needs are known before a license application is filed through a FERC-approved study plan. The approved study plan brings, to the extent possible, pre-filing finality to the identification of the information and studies needed for FERC staff to prepare its environmental document and for participants to make recommendations and provide terms and conditions.

Requestor Name:	Adam Barnett
Agency /Affiliation:	Inyo National Forest
Primary Resource Area:	Recreation/Lands
Proposed Study Title:	Land 2: Visual Quality Assessment

1. Study goals and objectives

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

The goal of this study is to collect information that can be used to ensure project activities are not visually evident and provide the viewing public with characteristic natural appearing landscapes in accordance with visual quality objectives as specified in the Land Management Plan for the Inyo National Forest. This can be accomplished by inventorying and assessing the aesthetic and recreational resources in the proposed project area and identifying potential effects on those resources from the proposed project construction, maintenance and operations in the project vicinity over the term of the new license.

The study objective is to establish a baseline condition by assessing development in the project vicinity, and evaluate conformance with applicable law, regulation, and policy. This includes the Land Management Plan (LMP), Scenery Management System (SMS), the assigned Visual Quality Objectives (VQOs), and the Built Environment Image Guide (BEIG). The study will identify effects on visual quality resulting from existing project facilities, and potential effects from construction, maintenance, and operations in the project vicinity.

Specific objectives of the study will be evaluated for conformance with applicable law, regulation, and policy and include:

- Inventory of aesthetic and recreational resources and identify Key Observation Points (KOPs) from various locations around the project vicinity, such as, travel corridors, trails, fishing locations, recreation sites, etc. To include areas on NFS lands from which the project area is visible.

- Visual analysis of KOPs to include information gained from use studies (where people are going), the frequency of the visitation and the time spent. This is intended to identify and summarize the visual impacts or potential effects visitors may experience from each KOP.
- Inventory and assessment of the infrastructure, construction or maintenance activities in the project area and surrounding landscape. This information will then be used to conduct a viewshed analysis to determine what portion and acreages of the landscape are impacted. This can be accomplished through a GIS viewshed analysis. Findings will be used to develop mitigation measures to reduce or eliminate visual impacts or effects to the National Forest System lands and ensure recreational facilities are designed to meet the VQOs identified in the forest plan.
- Inventory and describe project infrastructure, operation and maintenance that have the potential to impact aesthetic resources and naturalness of project areas. Describe what the infrastructure looks like and its conformance with the VQO and BEIG. This will also include a description of project activities that are intended to protect or enhance visual quality throughout the project area. For example, vegetation treatments to reduce the potential for wildfire. This information will also be used to develop mitigation measures to reduce or eliminate impacts or effects to the National Forest System lands and ensure recreational facilities are designed to complement the sense of place as defined by the Scenic character and Design Narrative.

The outcome of all objectives will be to design management activities to meet the VQOs and comply with the Inyo NF Land Management Plan.

2. Relevant Resource Management Goals and Public Interest Considerations
18 CFR §5.9(b)(2): If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The 2019 Inyo National Forest Land Management Plan provides direction for the management and preservation of scenery. The plan designates State Route 120 through the project area as a National Forest Scenic Byway in recognition of the scenic value of the area. The Federal Highway Administration also designated Lee Vining Canyon as a National Scenic Byway. As such, the preservation of scenic character is a goal of area management.

Scenic character is a combination of the physical, biological, and cultural images that gives an area its scenic identity and contributes to its sense of place. Scenic character provides a frame of reference from which to determine scenic attractiveness and to measure scenic integrity.

Desired Conditions (SCEN-FW-DC)

03 In places with distinctive scenic attractiveness, and in “special places”, scenic integrity is maintained or improved to assure high quality viewing experiences. The Inyo National Forest’s scenic resources complement the recreation settings and experiences, as described by the range of scenery integrity objectives, while reflecting healthy and sustainable ecosystem conditions. The desired distribution of scenic integrity objectives is displayed in figure 8, appendix A [of the Land Management Plan].

04 The built environment meets or exceeds scenic integrity objectives and contributes to scenic stability.

Scenic character is the combination of the physical, biological, and cultural images that give an area its scenic identity and contributes to its sense of place. Scenic character provides a frame of reference from which to determine scenic attractiveness and to measure scenic integrity. As described in the 2012 Planning Rule and Forest Service Handbook 1909.12 Chapter 20, Section 23.23f, scenic character replaces the term “landscape character” used in Landscape Aesthetics - A Handbook for Scenery Management (Agriculture Handbook 701).

Scenic integrity objectives in the context of the forest plan are equivalent to goals or desired conditions. Scenic integrity describes the state of naturalness or a measure of the degree to which a landscape is visually perceived to be “complete.” The highest scenic integrity ratings are given to those landscapes that have little or no deviation from the scenic character valued by constituents for its aesthetic quality. Scenic integrity is the state of naturalness or, conversely, the state of disturbance created by human activities or alteration.

Scenic Integrity Objectives for Lee Vining Canyon are High and Very High.

- **Very high:** landscapes where the valued scenic character “is” intact with only minute, if any, deviations. The existing scenic character and sense of place is expressed at the highest possible level.
- **High:** landscapes where the valued scenic character appears unaltered. Deviations may be present but must repeat the form, line, color, texture and pattern common to the scenic character so completely and at such scale that they are not evident.

18 CFR §5.9(b)(3): If the requester is a not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Requestor is a resource agency.

3. Existing Information and Need for Additional Information

18 CFR §5.9 (b)(4): Describe existing information concerning the subject of the study proposal, and the need for additional information.

The Inyo NF Land Management Plan designates Visual Quality Objectives (VQOs) for Lee Vining Canyon and provides a description of the objectives. The VQOs in the project vicinity are

High and Very High. VQOs are part of the Inyo NF GIS and available for use for this study. Additional information is needed to determine facility conformance and impacts on visual resources.

4. Project Nexus

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

SCE's continued operation and maintenance and facilities within Lee Vining Canyon and in the Saddlebag Lake area may not provide the viewing public with characteristic natural appearing landscape in accordance with the Visual Quality Objectives established by the 2019 Inyo NF Land Management Plan. Operation, maintenance and construction of the project may affect scenic resources, depending on the specific location of facilities and access roads and the extent to which changes in river flows and water levels results in detectable changes to landscape character around the proposed Project area. The Visual Resource Assessment will focus on these impacts and help inform Project design and mitigation options to ensure visitor preference and satisfaction.

5. Methods

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

Specifics of the study proposal would need to be coordinated through the FS and other relicensing participants. It is recommended that this visual resource assessment include:

- identifying facilities and resources to evaluate
- identifying KOPs
- information gathering
- mapping of the location of the project facilities identified with respect to their associated viewsheds

A study report should be produced that identifies visual quality conditions as they relate to Lee Vining project facilities and activities from the KOP viewsheds.

The methods for this proposed study are consistent with the goals, objectives, and methods outlined for recent FERC hydroelectric relicensing efforts in California. For example, see Yuba County Water Agency (2011h; FERC no. 2246).

6. Level of Effort and Cost

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

The level of effort and cost is commensurate with the necessity of the study information. The study relies on readily available information about project facilities, standard observational methods to identify KOPs, and GIS viewshed analysis.

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APPENDIX C PROPOSED TECHNICAL STUDY PLANS

WQ-1	Stream and Reservoir Water Quality
AQ-1	Reservoir Fish Populations
AQ-2	Stream Fish Populations
AQ-3	Aquatic Habitat Mapping and Sediment Characterization
AQ-4	Aquatic Invasive Plants
AQ-5	Operations Model
AQ-6	Lower Lee Vining Creek Channel Morphology
TERR-1	General Botanical Resources Survey
TERR-2	General Wildlife Resources Survey
REC-1	Recreation Use Assessment
REC-2	Existing Recreation Facilities Condition Assessment
LAND-1	Project Lands and Roads
LAND-2	Visual Resource Assessment
CUL-1	Cultural Resource
TRI-1	Tribal Resource

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WQ-1 STREAM AND RESERVOIR WATER QUALITY
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations have the potential to alter water quality in Project reservoirs and affected stream reaches, which may affect fish or other aquatic species, or exceed Lahontan Regional Water Quality Control Board (LRWQCB) objectives for Project waters.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Project operations may affect water quality in Saddlebag Lake, Tioga Lake, Ellery Lake, Glacier Creek downstream of Tioga Lake, Lee Vining Creek between Saddlebag Lake and Ellery Lake, and Lee Vining Creek between Ellery Lake and the Los Angeles Department of Water and Power (LADWP) Diversion Dam. Current data are needed to assess water quality in Project waters in relation to LRWQCB objectives.

3.0 STUDY GOALS AND OBJECTIVES

Assess consistency of Project reservoirs and Project-affected stream reaches with water quality objectives.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The Study Area will include Project reservoirs and selected sites within Project-affected stream reaches. Exact locations of the monitoring stations will be determined in the field based on sampling suitability (i.e., well-mixed and deep enough for representative sampling) and accessibility. Relicensing participants will be invited to participate in site selection activities and will be provided as much advance notice of such field efforts as possible. Site coordinates of sampling sites will be documented with a hand-held Global Positioning System (GPS) unit, where possible. Established station locations will be re-occupied during subsequent water quality monitoring efforts. Specifically excluded from the Study Area are areas where access is unsafe (very steep terrain or high streamflow). Proposed water quality measurement and sampling locations are listed below.

4.1. RESERVOIR PROFILE SITES

- Saddlebag Lake
- Ellery Lake
- Tioga Lake

4.2. IN SITU WATER QUALITY SAMPLING SITES

- Saddlebag Lake
- Lee Vining Creek between Saddlebag Dam and its confluence with Slate Creek
- Lee Vining Creek between its confluence with Slate Creek and Glacier Creek

- Lee Vining Creek between its confluence with Glacier Creek and Ellery Lake
- Ellery Lake
- Lee Vining Creek immediately downstream of Poole Powerhouse
- Lee Vining Creek upstream of the LADWP Diversion
- Tioga Lake
- Glacier Creek downstream of Tioga Dam

5.0 EXISTING INFORMATION

Existing water quality data presented in Section 5.2, *Water Resources*, of the Preliminary Application Document (PAD) is primarily limited to data obtained through CEDEN (2020) and Cohen (2019). Additional spot measurements of temperature, conductivity, and dissolved oxygen (DO) were obtained during fish monitoring efforts in Lee Vining Creek upstream of Slate Creek. Water quality data collected in the Project reservoirs and Project-affected stream reaches are typically within published limits for water quality objectives in the LRWQCB Basin Plan (Basin Plan) (LRWQCB, 2019). One exception includes DO in Project reservoirs and Project-affected streams, which fluctuated seasonally and occasionally did not meet Basin Plan objectives, either at the bottom of reservoirs after extended periods of stratification (i.e., late winter and late summer), or in summer when water temperatures were at their maxima. LRWQCB objectives for DO state that concentration as percent saturation shall not be depressed by more than 10 percent, nor shall the minimum DO concentration be less than 80 percent of saturation. In addition, DO concentrations in waters with the beneficial uses cold freshwater habitat (COLD) and spawning, reproduction and/or early development (SPWN) shall not be less than 9.5 milligrams per liter (mg/L) over a 7-day mean, nor less than 8.0 mg/L in 1 day. The maximum concentration of oxygen that can be dissolved in water varies with temperature, pressure, and conductivity. At high elevations and moderate temperatures, such as those found in the Project Area, this can result in reservoir and stream DO concentrations below Basin Plan objectives but are 100 percent saturated for the ambient atmospheric pressure and water temperature. DO can also vary naturally in lakes and streams in response to seasonally or daily variable rates of net ecosystem oxygen consumption and production (e.g., algal growth and photosynthesis). DO concentrations were measured in Project reservoirs and their outlet streams from 2015 to 2017 (Cohen, 2019), in upper Lee Vining Creek just downstream of Saddlebag Lake as part of fish monitoring efforts (Salamunovich, 2017), and in Lee Vining Creek downstream of Poole Powerhouse on single dates in 2000, 2011, and 2019 (CEDEN, 2020). DO in Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek, and in Lee Vining Creek downstream of Poole Powerhouse, also did not achieve Basin Plan objectives for COLD and SPWN at all measurement points.

Nutrient (ammonium, nitrate, orthophosphate) and DO concentrations were measured in all Project reservoirs and their outlet streams between 2015 and 2017 (Cohen, 2019). Nutrient concentrations were near or below detection, although hypolimnetic and outlet

stream ammonium and orthophosphate were occasionally elevated in late summer and spring, which correlated with prolonged reservoir stratification and reduced DO.

Data were also collected in lower Lee Vining Creek as part of Surface Water Ambient Monitoring Program and Statewide Perennial Streams Assessment stream surveys (CEDEN, 2020). Samples were collected 0.7, 3.5, and 4.8 miles downstream of Poole Powerhouse in 2011, 2000, and 2019, respectively. Nitrate concentrations did not exceed the Basin Plan objective of 10 mg/L for water designated as municipal and domestic water supply (California Code of Regulations Title 22 Section 64431). Based on reported ammonium concentrations, temperature, and typical Sierra lake pH, un-ionized ammonia concentrations did not exceed the Basin Plan objective.

Water temperature was measured in Lee Vining Creek downstream of Poole Powerhouse on single dates in 2000, 2011, and 2019 (CEDEN, 2020), and in upper Lee Vining Creek immediately downstream of Saddlebag Lake as part of fish monitoring efforts (Salamunovich, 2017).

Samples for fecal coliform were collected immediately downstream of Poole Powerhouse from 2012 to 2013, and upstream of the LADWP Diversion from 2011 to 2015 (CEDEN, 2020). All sample measurements were below Basin Plan objectives for coliform counts but were not collected in the method required by the Basin Plan.

At the time of publication of the PAD, no data were available to determine current reservoir temperature and DO profiles, nor were data available to assess whether Project waters met Basin Plan objectives for most parameters, apart from biostimulatory substances. Current data are needed to assess water quality in Project waters in relation to Basin Plan objectives.

6.0 STUDY APPROACH

6.1. WATER QUALITY SAMPLING

6.1.1. RESERVOIR PROFILES

Profiles of water temperature, DO, pH, specific conductivity, and turbidity will be measured at the three sites described above in Section 4.1. Profiles will be measured during spring, summer, and fall at each site, at 1-meter intervals at each reservoir's location of maximum depth. A multi-parameter water quality meter (HydroLab, YSI, or similar) will be used to measure profiles, and a GPS unit will be used to record the location of each profile. Pre- and post-sampling calibration checks of the water quality meter, following the manufacturer instructions, will be conducted on-site for each day of sampling or as appropriate for each sensor. Profiles of temperature will be examined in the field to determine if reservoirs are stratified, to inform sampling described below in Section 6.1.2.

Temperature and DO profiles were collected in Project reservoirs in 2015, 2016, and 2017 in spring, summer, fall, and under ice in some cases (Cohen, 2019). These data were not immediately available at the time of PAD publication and represent an array of water year types that will be compared to profiles collected during this study.

6.1.2. RESERVOIR AND STREAM WATER QUALITY SAMPLING

Water quality sampling will be conducted at each of the nine locations described in Section 4.2 above. All parameters listed in Table 6-1 will be measured in spring, summer, and fall simultaneously with reservoir profiling described in Section 6.1.1.

In each reservoir, water samples will be collected at two depths when reservoirs are stratified (see Section 6.1.1): a subsurface grab sample, collected at approximately 0.5 meter depth, and a sample collected from below the thermocline with a Kemmerer bottle or equivalent sampling device. If Project reservoirs are not stratified, a single sample will be collected at approximately 0.5 meter depth.

Stream samples will be collected from just below the water surface as a composite sample from a well-mixed area of each stream site. All parameters in Table 6-1 will be measured in spring, summer, and fall.

Each sample collected will be placed in a laboratory-supplied container. Each sample container will be labeled, preserved, stored, and delivered to a state-certified water quality laboratory, and the laboratory will analyze the contents using the methods listed in Table 6-1. A chain-of-custody record will be maintained for each sample container.

Table 6-1. Parameters for the Reservoir and Stream Water Quality Sampling

Parameter		Method	Target Reporting Limit µg/L (or other)	Hold Time
Basic Water Quality: Field				
Dissolved Oxygen	DO	SM 4500-O	0.1 mg/L	Field
Specific Conductance	-----	SM 2510 A	0.1 µmhos	Field
pH	-----	SM 4500-H	0.1 standard unit	Field
Turbidity	-----	SM 2130 B	0.1 NTU	Field
Basic Water Quality: Laboratory				
Total Dissolved Solids	TDS	EPA 2540 C/SM 2340 C	1 mg/L	7 d
Total Suspended Solids	TSS	EPA 2520 D SM 2340 D	1 mg/L	7 d
Nutrients				
Nitrate-Nitrite	-----	EPA 300.0	2	28 d < pH 2
Total Ammonia as N	-----	EPA 4500-NH3/SM 4500-NH3	0.02	28 d < pH 2
Total Kjeldahl Nitrogen as N	TKN	SM 4500 N	100	28 d < pH 2
Total Phosphorous	TP	SM 4500-P	20	28 d < pH 2
Dissolved Orthophosphate	PO ₄	EPA 365.1/EPA 300.0	0.01	48 h at 4 °C

°C = degrees Celsius; µg/L = micrograms per liter; µmhos = micromhos; d = days; h = hours; mg/L = milligrams per liter; NTU = nephelometric turbidity unit

Method sources: APHA, 2017; USEPA, 2017; and Wilde et al., 2014

6.2. ANALYSIS

A report will be prepared that will include results from all samples collected and analyzed. Tables summarizing measured water quality parameters for the various sites will be developed. Any general patterns in measured water quality parameters by season and watershed position (i.e., distance downstream) will be discussed. All parameters measured will be compared to Basin Plan water quality objectives and any exceedances will be enumerated and evaluated in terms of any relationship to Project operations. Water quality data collected during this study may also be used by related studies evaluating fish populations.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Spring–Fall 2022	Conduct water quality fieldwork
Winter 2022/2023	Analyze data and prepare draft report
Winter 2023	Distribute draft report to Stakeholders
Spring 2023	Stakeholder review and provide comments on draft report
Fall 2023	Resolve comments and prepare final report
TBD	Distribute final report in Final License Application

TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the PAD and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources Technical Working Group Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding stream and reservoir water quality. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the Technical Working Group and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title

18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the PAD and Notice of Intent.

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Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	MLC	2/25/2021 Recreation and Land Use TWG	Water quality assessments along California State Highway 120 at pull-outs and dispersed camping areas were proposed.	Water quality assessments along State Route 120 at pull-outs and dispersed camping areas were not included in the Study Plan due to lack of nexus; State Route 120 is a California State Highway maintained by CalTrans, thus there is no nexus to Project operations or maintenance. Dispersed camping is not related to or affected by Project operations or maintenance.
2	USFS	1/25/2021 Aquatic TWG	USFS suggested Licensee consider measurements of <i>e.coli</i> rather than fecal coliform if there is a nexus with the Project.	No recreation facilities are included in the Project license; therefore, bacteria monitoring was not included in the Study Plan due to lack of nexus.
3	CDFW	2/22/2021 Aquatic TWG	CDFW is interested in obtaining profiles of temperature and dissolved oxygen from Project reservoirs.	Proposed study methods include seasonal profiles of temperature and dissolved oxygen in each Project reservoir, and comparison to profiles collected in Project reservoirs 2015–2017.
4	SWRCB	2/22/2021 Aquatic TWG	SWRCB is interested in establishing baseline conditions in Project waters and noted that Bishop Creek’s water quality study plan included a recreation component but are not familiar with the recreation levels along Lee Vining Creek.	Proposed study methods include measuring standard water quality parameters to establish baseline conditions in Project reservoirs and Project-affected stream reaches. No Project recreation facilities exist; therefore, water quality monitoring at Inyo National Forest recreation sites was not included in the Study Plan due to lack of nexus.

CalTrans = California Department of Transportation; CDFW = California Department of Fish and Wildlife; MLC = Mono Lake Committee; SCE = Southern California Edison; SWRCB = State Water Resources Control Board; TWG = Technical Working Group; USFS = U.S. Forest Service

10.0 REFERENCES

APHA (American Public Health Association), American Water Works Association, and Water Environment Federation. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd edition. Washington, D.C.

CEDEN (California Environmental Data Exchange Network). 2020. Website. State Water Resources Control Board, Sacramento, CA. Accessed: June 14, 2020. Available online: <http://ceden.org/index.shtml>.

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AQ-1 RESERVOIR FISH POPULATION
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations have the potential to affect the condition of recreational fisheries within Project reservoirs.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Project operations have the potential to affect environmental conditions within Project reservoirs, including water quality and water surface elevations.

Changes in these environmental conditions can affect the abundance, distribution, and structure of the local fish communities.

The Licensee and resource agencies will use the information obtained from this study in combination with existing information to evaluate effects of Project operations on reservoir fish populations and inform potential Protection, Mitigation, and Enhancement measures.

3.0 STUDY GOALS AND OBJECTIVES

Study goals and objectives were determined during the February 22, 2021, and March 29, 2021, Aquatic Resources Technical Working Group Meetings (TWGs). Stakeholders stated that there is no current information regarding the distribution of fish species in the Project Area. The goal of this study is to assess fish populations within Project reservoirs. The objective of this study is to obtain information on reservoir fish populations where background data are lacking.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

Fish population sampling is proposed at Project reservoirs, specifically:

- Saddlebag Lake
- Ellery Lake
- Tioga Lake

5.0 EXISTING INFORMATION

Fish species found in Project waters include self-sustaining populations of brown and brook trout, and a stocked population of rainbow trout. Brown trout were introduced to the Mono Lake basin in 1919, with plantings continuing until 1942, and eastern brook trout were introduced in 1931. After 1942, brown trout plants were replaced by annual plants of catchable rainbow trout (Salamunovich, 2017). California Department of Fish and Wildlife (CDFW) introduced catchable rainbow trout to Project reservoirs in 1980, and rainbow trout continue to be annually planted (FERC, 1992). Sterile rainbow trout were added to releases in 2011, and since 2013 all planted rainbow trout have been sterile. In 2016, CDFW planted over 18,000 rainbow trout in Saddlebag Lake, 13,375 in Ellery Lake,

and 9,995 in Tioga Lake (Salamunovich, 2017). Life history information for these species is described in Section 5.3, *Fish and Aquatic Resources*, of the Preliminary Application Document (PAD). There is no recent information on non-planted fish populations within Project reservoirs.

6.0 STUDY APPROACH

6.1. RESERVOIR FISH SURVEYS

Reservoir sampling will be conducted using gill netting and boat electrofishing, dependent on access, to assess fish species composition, relative abundance, and age-distribution within Project reservoirs. Sampling will occur once during summer or fall. To minimize the potential to spread invasive species (e.g., New Zealand mud snail [*Potamopyrgus antipodarum*], quagga/zebra mussel [*Dreissena* spp.], Chytrid fungus [*Batrachochytrium* spp.]), appropriate decontamination protocols will be followed prior to each aquatic-based field effort or when moving between watersheds. Procedures may include, but not be limited to, freezing or soaking with a commercial 409 cleaner all field gear (including waders, boots, wetsuits) to kill New Zealand mud snail, spraying equipment with a bleach and water solution to prevent spread of quagga/zebra mussel, and inspecting all field equipment (including boats) after each use.

Fish data collected at each site will include species identification, total length (millimeters), fork length (millimeters), weight (grams), and notes on general condition. At each sample location, scale samples will be collected from up to 20 fish of each game species (e.g., trout species) across a variety of sizes at a variety of locations to assess age and growth relationships.

General information recorded will include impoundment name, gear type, Global Positioning System (GPS) coordinates of sample location, and water chemistry (i.e., water temperature, dissolved oxygen, pH, and conductivity).

6.1.1. GILL NETS

Project reservoirs will be sampled using variable-mesh gill nets at three locations per reservoir. Variable-mesh gill nets consist of multiple panels of variable mesh sizes so that a gradient of sizes is represented across the net.

One variable-mesh “adult” gill net (1- to 4-inch mesh, 80 to 125 feet long) and one variable-mesh “juvenile” gill net (less than 1-inch mesh, 30 feet long) will be deployed at each of three locations within each reservoir, occupying nearshore and deepwater habitats. The nets will be placed sloping along the gradient of the reservoir bottom. The sampling locations will be distributed along the length of the reservoir with the goal of sampling both deepwater and littoral zone habitat.

The time of deployment, location, minimum and maximum water depths, and net type will be recorded at each gill net station. Water chemistry data will be collected (where feasible) at the approximate net placement depth.

To reduce the potential for mortality and to provide information on fish composition, the gill nets will be set for two relatively short 8-hour net-set periods. These will include one day and one night period, over an approximate 24-hour period to facilitate good coverage and to separate diel periods. Captured and processed fish will be allowed to recover in a live-car and will be released after the sampling is complete or in an area away from the sampling location.

6.1.2. SHORELINE ELECTROFISHING

Daytime boat electrofishing will be conducted using standard methods (Reynolds, 1996) to sample nearshore habitat on Project reservoirs. Sampling will include two to four sites per reservoir. Electrofishing stations will be approximately 100 meters in length and will target a diversity of nearshore habitats. Sampling stations will be documented using GPS. Electrofisher “time on” will be recorded for each sampling site and a consistent pace and effort will be employed at all sites.

Captured and processed fish will be allowed to recover in a live-car and will be released after the sampling is complete.

6.2. ANALYSIS

Data will be entered into an Excel spreadsheet for reduction, tabulation, and summary. Capture data will be summarized by species composition for the whole lake and all gear types, as well as by gear type and site. Length-frequency histograms will be developed for each trout species observed or captured and used to estimate size and age-class distribution. Breaks and modalities within the histograms will be evaluated and compared to the subsample of aged scales collected at each study site and relevant literature on trout growth to estimate the age-class distribution of each species. Relative abundance will be determined by calculating catch-per-unit-effort (fish per hour) by gear type and site.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Spring 2022	Refine study sites
Summer – Fall 2022	Conduct field surveys
Winter 2022/2023	Compile study results, conduct analyses, and prepare draft report
TBD	Distribute draft report to Stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
TBD	Distribute final report in Final License Application

TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the PAD and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources TWG Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding reservoir fish populations. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft study plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the PAD and Notice of Intent.

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Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	CDFW	2/22/2021	One goal of study should be to determine whether self-sustaining populations of trout exist in Project reservoirs.	Results of this study, including age- and size-class information, will be used to determine whether self-sustaining populations of trout are present in Project reservoirs.
2	CDFW	5/24/2021	CDFW suggests using boat electrofishing and gillnetting instead of beach seining to sample nearshore habitats.	Proposed fish collection methods include boat electrofishing and gillnetting.
3	CDFW	5/24/2021	CDFW asked whether an otolith analysis would be included.	This study includes scale analysis, rather than otoliths, to approximate age of fish collected.

CDFW = California Department of Fish and Wildlife

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10.0 REFERENCES

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AQ-2 STREAM FISH POPULATION
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations have the potential to affect recreational fisheries within Project streams.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Project operations have the potential to affect environmental conditions within streams downstream of Project reservoirs, including water quality and quantity. Changes in these environmental conditions can affect the abundance, distribution, and structure of the local fish communities. The Licensee and resource agencies will use the information obtained from this study, in combination with existing information, to evaluate the effects of Project operations on the local fish communities, and to develop any necessary Protection, Mitigation, and Enhancement measures.

3.0 STUDY GOALS AND OBJECTIVES

Study goals and objectives were determined during the February 22, 2021, and March 29, 2021, Aquatic Resources Technical Working Group (TWG) Meetings. The goal of this study is to supplement the existing available information to assess fish populations in Project-affected stream reaches. The objective of this study is to obtain information on existing fish populations downstream of Project reservoirs.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The study area includes the Project-affected reaches of Lee Vining Creek and Glacier Creek. Three sites between Saddlebag Dam and Slate Creek were previously established and sampled in 1999 to 2001, 2006, 2011, and 2017 (Salamunovich, 2017); these sites will be re-sampled for comparison to historical data.

Four additional survey sites¹ will be selected during a pre-survey reconnaissance visit:

- Three sites in Lee Vining Creek, including:
 - Between Slate Creek and Glacier Creek
 - Between Glacier Creek and Ellery Lake
 - Between Poole Powerhouse and the pool upstream of the Los Angeles Department of Water and Power Diversion Dam
- One site in Glacier Creek downstream of Tioga Dam

¹ A site between Rhinedollar Dam and Poole Powerhouse was considered but eliminated because this portion of Lee Vining Creek cannot be safely accessed.

5.0 EXISTING INFORMATION

The Licensee has conducted fish sampling in upper Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek since 1999. These surveys were not specified in the 1997 Federal Energy Regulatory Commission (FERC) license, but were conducted in conjunction with riparian and aquatic habitat monitoring efforts stipulated in Condition 7 of the license. Sample sites included three contiguous 100-meter sections of stream just upstream from the Slate Creek confluence.

Fish surveys were conducted in spring, summer, and fall from 1999 to 2001, and in the fall of every fifth year thereafter, 2006, 2011, and 2016 (Sada, 2007; Sada and Hogle, 2011; Salamunovich, 2017). The surveys documented brown trout, brook trout, and a small number of hatchery-raised rainbow trout in the reach between Saddlebag Dam and the confluence of Slate Creek. Fish population surveys conducted in 2016 documented naturally produced brown and brook trout populations in good physical condition, with multiple age classes present, satisfactory condition factors, an abundance of recently hatched young-of-year (YOY), and actively spawning adults (Salamunovich, 2017). Both brown and brook trout had length-frequency and age-class distributions typical of the species, with the highest number of fish belonging to the YOY age class and lower numbers in each subsequent age class; data suggested the presence of six to seven age classes of brown trout and at least six age classes of brook trout (Salamunovich, 2017). The average abundance, density, and biomass of brook and brown trout within this reach were all significantly greater in 2016 compared to previous survey years (Table 5-1; Salamunovich, 2017). Brown trout were the numerically dominant trout species in the reach in 2016; however, biomass was split more evenly between the two species (Salamunovich, 2017). Brown trout density in 2016 greatly exceeded that of brook trout, which was opposite from previous years of the study. Only one hatchery-reared rainbow trout was captured in 2016 (Salamunovich, 2017).

Table 5-1. Average Abundance, Density, and Biomass Estimates for Naturally Reproducing Trout (Brown and Brook) in Lee Vining Creek Between Saddlebag Dam and the Confluence of Slate Creek, 1999–2016

Survey Year ^a	Abundance (trout/mile)	Density (trout/m ²)	Biomass (g/m ²)
1999	998	0.14	6.8
2000	601	0.12	4.1
2001	735	0.11	4.2
2006	1,159	0.16	8.9
2011	880	0.02	1.1
2016	3,525	0.43	13.4

Sources: Sada, 2007; Sada and Hogle, 2011; Salamunovich, 2017

g/m² = grams per square meter

Note:

^a Fish surveys were conducted in spring, summer, and fall from 1999 to 2001, and in the fall of every fifth year thereafter (2006, 2011, and 2016)

EA Engineering, Science, and Technology (EA) conducted population studies within Lee Vining Creek in 1984, 1986, and 1987 between Saddlebag Dam and Slate Creek, between Slate Creek and Ellery Lake, and below Poole Powerhouse. The studies indicated trout biomass was highest in the reach between Saddlebag Dam and the confluence of Slate Creek (8.3 grams per square meter [g/m²]), followed by the reach between the confluence of Slate Creek and Ellery Lake (7.2 g/m²). Below Poole Powerhouse, trout biomass was estimated to be 6.7 g/m² (FERC, 1992). The EA report was not available prior to the production of the Preliminary Application Document (PAD) and this Study Plan; therefore, more detailed information from this study is not available.

Lee Vining Creek fish population data gaps include species composition, density, and age-distribution of the existing trout communities in Lee Vining Creek between the confluence of Slate Creek and the confluence of Glacier Creek, in Lee Vining Creek downstream of Poole Powerhouse, and in Glacier Creek downstream of Tioga Dam.

6.0 METHODS

6.1. FIELD SURVEYS

Sampling methods will include electrofishing, provided that environmental conditions allow electrofishing to be performed safely and effectively. Backpack electrofishing (e.g., using a Smith-Root Model LR-24 backpack electrofisher) will be conducted using a multiple-pass depletion method consistent with procedures described by Reynolds (1996).

Prior to sampling, a reconnaissance survey will be conducted to select survey sites in the four sample reaches listed above, which have not been previously surveyed, as well as to locate the boundaries of the previously surveyed sample sites in Lee Vining Creek above the Slate Creek confluence. The upstream and downstream extent of each electrofishing site will be marked using a handheld Global Positioning System (GPS) device.

Sites will be approximately 300 feet long and will be separated into two segments to improve sampling efficiency. Block nets will be used to prevent migration into and out of the sample segment and to facilitate an accurate assessment of the sample population. The electrofishing crew will consist of one to two backpack electrofishers and approximately two netters, depending on the size of the wetted stream channel. Water conductivity of each site will be measured with a meter to help determine the appropriate power output for fish capture. The electrofishing crew will begin sampling at the downstream block net and proceed slowly and deliberately upstream, moving from the center of the channel out to the stream margin, and making simultaneous and parallel passes through the sampling area. As trout are captured (netted), they will be placed in buckets and periodically transferred to a live-car or live-well to be held until the completion of the pass; aeration will be provided as needed. Upon completion of each pass, the

following data will be recorded for each individual captured: species identification, total length (millimeters), weight (grams), and, if applicable, notes on the general condition of the fish, including any parasites that may be present. After processing, fish will be placed in an aerated bucket of cool river water. Fish in the recovery bucket will be regularly transferred to a live-car (1/8-inch mesh net) located in the creek outside of the study site. After completion of the survey, all fish will be released back into the area of capture. All trout will be inspected for visual markings and fin erosion, which could suggest hatchery origin. At each sample site, scale samples will be collected from up to 10 fish of each game species (e.g., rainbow trout, brown trout, brook trout) across a variety of sizes and aged for comparison to confirm age/size class determinations.

Habitat characteristics and water quality parameters will be measured at all sites at the time of sampling. The following site information will be recorded at each survey segment: stream name, reach, site name, segment, crew member names, time of day, environmental (weather) conditions (including air temperature), stream length, average stream width, stream habitat characteristics such as cover, substrate, and habitat composition (i.e., riffle, pool, run), streamflow, water quality (water temperature, dissolved oxygen, pH, conductivity, and specific conductivity), GPS coordinates, and electrofishing duration. Photographs will also be taken to document the specific location of the top and bottom block nets and condition of the site.

If environmental conditions (e.g., high flows, deep water, etc.) do not allow for safe or effective electrofishing at a site, then sampling will include direct observation using multi-pass snorkeling methods. Three repeat passes will be made through each site to allow for bounded count population estimates as well as to account for variability between observations. Specifically, divers will enter the creek downstream of the area to be sampled and pause for a brief period to allow the fish to become accustomed to the divers' presence before surveying each site. Field crews will consist of two or more biologists snorkeling across established lanes, depending on stream width. Snorkelers will identify, count, and make visual total length estimates in 25-millimeter size classes while moving at a slow, uniform pace. Prior to sampling, snorkelers will calibrate estimated fish lengths by viewing variably sized objects of known lengths underwater. Fish will be counted as they pass below or to the side of each observer, with surveyors communicating as best as possible to avoid potential double-counting. Each surveyor will record data on dive slates; data will be transcribed to pre-printed data sheets following each pass.

6.2. ANALYSIS

Data collected during the stream fish population study will be entered into an Excel database for data reduction, tabulation, and summary. Data collected in this study will be compared with data collected during previously conducted studies, where possible.

Size distribution will be evaluated at all survey sites. Length-frequency histograms will be developed for each trout species observed or captured and used to estimate size and age-class distribution. Breaks and modalities within the histograms will be evaluated and compared to the subsample of aged scales collected at each study site and relevant literature on trout growth to estimate the age-class distribution of each species.

Trout densities (number per acre), biomass (pounds per acre), and 95 percent confidence intervals will be computed for each electrofished site using the Zippin estimator within the multiple-pass regression analysis software developed by Van Deventer and Platts (1989).

Data collected during snorkel surveys will be used to calculate species densities using the bounded counts estimator (Robson and Whitlock, 1964):

$$\tilde{y}_B = d_{[m]} + (d_{[m]} - d_{[m-1]})$$

where $d_{[m]}$ is the maximum number of fish counted during any of the passes and $d_{[m-1]}$ is the second highest count; counts will be arranged in ascending order as:

$$d_{[1]} \leq d_{[2]} \leq d_{[3]} \leq \dots \leq d_{[m-1]} \leq d_{[m]}$$

The 95 percent confidence intervals will be calculated based on Robson and Whitlock (1964) and Routledge (1982), as cited in Mohr and Hankin (2005). The lower bound (N_L) will be calculated as:

$$N_L = d_{[m]}$$

The upper bound (N_U) will be calculated as:

$$N_U = d_{[m]} + [(1 - \alpha) / \alpha] \cdot [d_{[m]} - d_{[m-1]}]$$

where α is the level of significance (i.e., $\alpha=0.05$ for calculation of a 95 percent confidence interval) unless $d_{[m]} = d_{[m-1]}$, in which case the upper bound for the confidence interval is equivalent to the abundance estimate, and the coverage probability for the confidence interval tends to be poor (Robson and Whitlock, 1964). In these instances, an adjustment proposed by Routledge (1982) that provides improved coverage probabilities to the confidence intervals will be used, where upper bound is estimated as:

$$N_U = d_{[m]} + (1 - \alpha) / (\alpha f)$$

where f is the number of times that the highest dive count is repeated.

Assumptions underlying the use of the bounded counts estimator include:

- No fish are double-counted on any given pass
- All fish present can be observed
- Diver observation probability is constant over all dives

To assess trout condition, the weight-to-length relationship of individual fish will be assessed as a method of identifying the nutritional state or health of the fish related to size and growth. Fulton's condition factor (Ricker, 1975), a measure of this nutritional

state, will be calculated for each fish. Individual condition factors (k) will be calculated by the following formula:

$$k = \frac{W \times 10^5}{TL^3}$$

where *W* is wet weight (grams) and *TL* is total length (millimeters). Mean fish condition will be calculated from individual condition values for each species.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Spring 2022	Refine study sites
Summer – Fall 2022	Conduct field surveys
Winter 2022/2023	Compile study results and prepare draft report
TBD	Distribute draft report to Stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
TBD	Distribute final report in Final License Application

TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the PAD and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources TWG Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding stream fish populations. Notes and materials from these meetings are available at <http://www.sce.com/leevining>. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the PAD and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	CDFW	2/22/2021 Aquatic TWG	Goal of study should be to evaluate stream fish population size, distribution, density, and possibly growth.	Methods proposed in this study will evaluate fish population size, distribution, density, age-class distribution, and condition.
2	CDFW	5/24/2021 Aquatic TWG	CDFW is interested in assessing the effects of hydropeaking on fish stranding downstream of Poole Powerhouse.	Fish stranding can occur when river stage rapidly decreases; however, stranding is dependent on several factors including, but not limited to, channel morphology, substrate characteristics, wetted history, seasonality, and fish life stage. Potential effects of Project operations on aquatic habitat, hydrology, and channel morphology will be evaluated in Study <i>AQ-3 Aquatic Habitat Mapping and Sediment Characterization</i> ; Study <i>AQ-5 Operations Model</i> ; and Study <i>AQ-6 Lower Lee Vining Creek Channel Morphology</i> , which will inform whether fish stranding is an issue below Poole Powerhouse.

CDFW = California Department of Fish and Wildlife; SCE = Southern California Edison; TWG = Technical Working Group

10.0 REFERENCES

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AQ-3 AQUATIC HABITAT MAPPING AND SEDIMENT
CHARACTERIZATION
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations have the potential to affect quantity and quality of aquatic habitat for fish populations within Project-affected stream reaches.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Project operations have the potential to affect environmental conditions (e.g., substrate, cover, water depth, and velocity) within Project-affected stream reaches. Changes in environmental conditions can affect the abundance, distribution, and structure of the local fish communities and their habitats.

3.0 STUDY GOALS AND OBJECTIVES

Specific goals of this study are to determine habitat conditions for fisheries within Project streams, and characterize baseline condition of channel substrate (e.g., fines and coarse sediments). Primary study objectives include: (1) characterizing habitat types, (2) characterizing spawnable gravel patches (i.e., coarse sediment) within Project-affected stream reaches, and (3) determining potential habitat-related limiting factors for the trout population.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

Habitat condition assessments are proposed in the following Project-affected stream reaches:

- Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek
- Lee Vining Creek between Slate Creek and Ellery Lake
- Glacier Creek between Tioga Lake and the confluence of Lee Vining Creek
- Lee Vining Creek between Poole Powerhouse and the pool upstream of the Los Angeles Department of Water and Power Diversion Dam

Specifically excluded from field study are areas where access may be unsafe.

5.0 EXISTING INFORMATION

An instream flow analysis for brook and brown trout was conducted to inform the 1992 license conditions. The analysis included segments of Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek, between Slate Creek and Ellery Lake, and downstream of Poole Powerhouse. The instream flow analysis indicated that habitat for adult and juvenile brown and brook trout in Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek is maximized at flows between 15 and 25 cubic feet per second (cfs), and declines significantly at flows below 10 cfs; between the confluence of Slate Creek and Ellery Lake, habitat for juvenile and adult brown and brook trout is

maximized between 20 and 40 cfs, and declines significantly below 10 cfs; and downstream of Poole Powerhouse, habitat for juvenile, adult, and spawning life stages of brown and brook trout is maximized at flows between 30 and 40 cfs, and declines most significantly for spawning adults at flows below 20 cfs (FERC, 1992).

Aquatic habitat studies were conducted in 1986 on Lee Vining Creek between Saddlebag Dam and Ellery Lake. The studies indicated that Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek is dominated by moderate-gradient riffles; the reach from the confluence of Slate Creek to the confluence of Glacier Creek is composed of two low-gradient meadow sections separated by a steeper gradient canyon; and the reach between the confluence of Glacier Creek and Ellery Lake is wide and relatively shallow, with a mixture of riffle and run habitat and low-gradient cascades that flow over cobble and gravel (FERC, 1992).

Aquatic habitat monitoring was conducted in 1999, 2001, 2006, 2011, and 2016 on Lee Vining Creek between Saddlebag Dam and the confluence of Slate Creek. These monitoring surveys documented adequate fish cover primarily in the form of overhanging vegetation (e.g., willow bushes and conifers), boulder pockets, turbulence, and occasional but infrequent accumulations of large, woody debris and submerged vegetation. Initial results from 1999 to 2006 indicated that between 13 and 59 percent of the reach was shaded (Sada, 2007; Sada and Rosamond, 2011, as cited in Salamunovich, 2017). Surveys conducted in 2016 identified an increase in canopy cover compared to previous survey years; however, differences are likely attributed to reduced sampling effort in 2016 (Salamunovich, 2017). No aquatic habitat surveys have been conducted in downstream reaches of Lee Vining Creek or in Glacier Creek.

Soils within the Project Vicinity are generally described as coarse-textured, well-drained, and low in organic matter; however, no information exists to describe current sediments within Project-affected stream reaches.

6.0 STUDY APPROACH

6.1. HABITAT MAPPING

Pedestrian surveys to delineate aquatic habitat will be conducted in Project-affected reaches during late summer/fall base flows. A three-tiered habitat mapping classification system developed by Hawkins et al. (1993) will be used to assist in the identification of individual habitat units in the field. Figure 6-1 shows the relationship among the three levels. Level I categorizes habitats as either “fast water” or “slow water.” Level II subdivides “fast water” into two categories: “turbulent” or “non-turbulent”; and “slow water” into two categories: “scour pool” or “dammed pool.” Habitat types classified in Level III are generally modified/adopted from McCain et al. (1990).

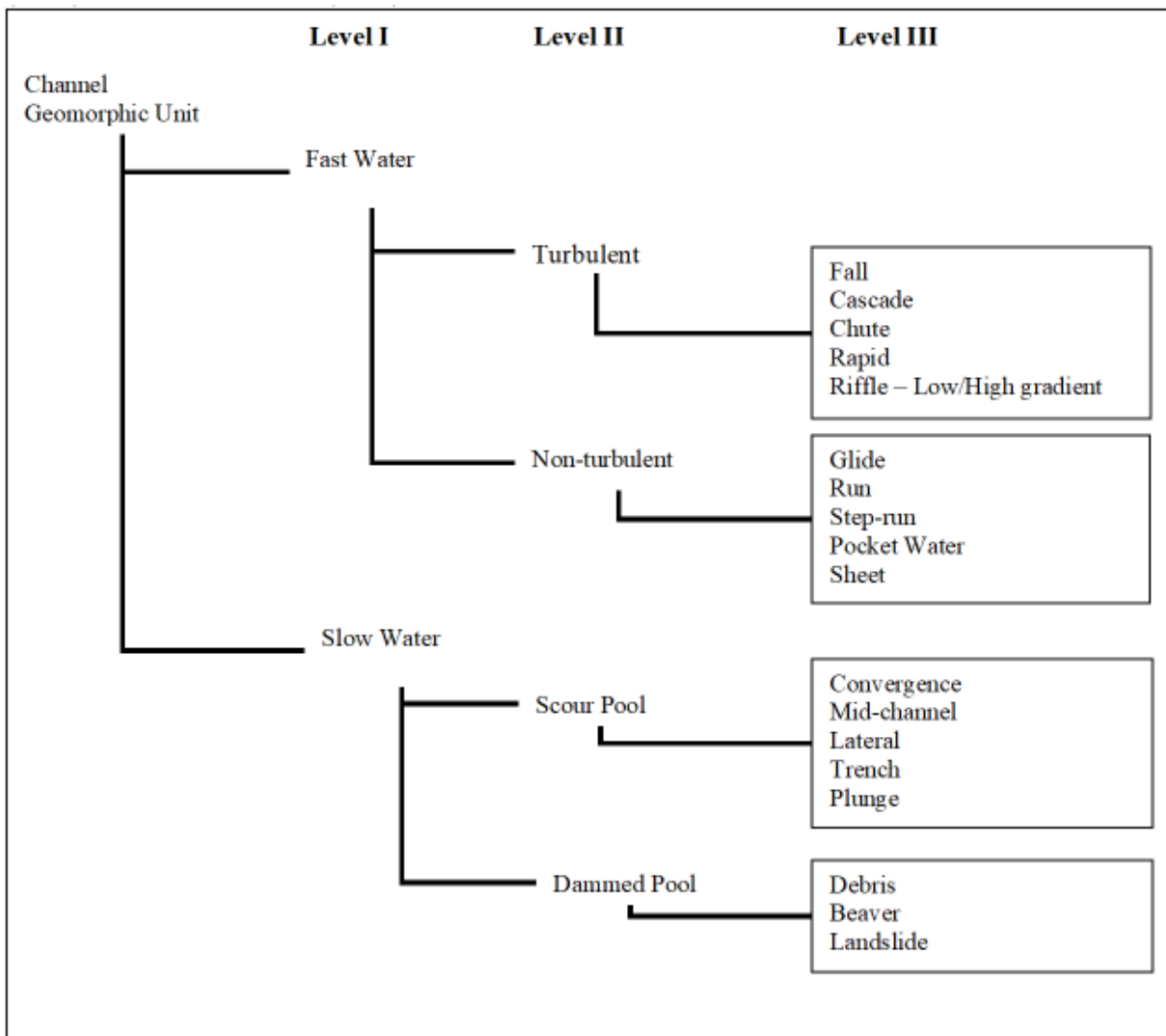


Figure 6-1. Three-tiered habitat mapping classification system adapted from Hawkins et al. (1993) and McCain et al. (1990).

Habitat mapping will be conducted on foot by teams of two individuals where survey teams are able to safely access and hike portions of the stream reaches. Habitat units will be designated using the habitat type definitions identified in Table 6-1. Units will be separated where unit length is at least equal to one to two times the active channel width (McCain et al., 1990; Flosi et al., 2010) and/or where habitat types are distinctive. The teams will record the length of each habitat unit using a range finder, which is referenced back to a known starting point or landmark. The mapping will be contiguous (i.e., each habitat unit will abut the next unit). Each distinct habitat unit will be numbered consecutively in an upstream direction, beginning at the downstream end of a designated reach. The upstream and downstream extent of each unit will be recorded using a Global Positioning System (GPS) device to an accuracy of approximately 1 to 10 meters.¹ The habitat attributes defined in Table 6-2 will be quantified and recorded for each unit. In

¹ GPS measurements are used for relocation of the habitat unit, and for coarse mapping, but not for measurement of unit length. Thus, the limited accuracy of the units in this narrow canyon is not considered problematic.

addition, crews will record the presence and location of potential barriers to upstream fish movement using the GPS.

Table 6-1. Habitat Types Adapted from McCain et al. (1990), Armantrout (1998), Payne (1992), McMahon et al. (1996), and Hawkins et al. (1993)

I. Fast Water	Riffles, rapid, shallow stream sections with steep water surface gradient.
A. Turbulent	Channel units having swift current, high channel roughness (large substrate), steep gradient, and non-laminar flow and characterized by surface turbulence.
1. Fall	Steep vertical drop in water surface elevation.
2. Cascade	Series of alternating small falls and shallow pools; substrate usually bedrock and boulders. Gradient high (more than 4%).
3. Chute	Narrow, confined channel with rapid, relatively unobstructed flow and bedrock substrate.
4. Rapid	Deeper stream section with considerable surface agitation and swift current; large boulder and standing waves often present.
5. Riffles	Shallow, lower-gradient channel units with moderate current velocity and some partially exposed substrate (usually cobble). <ul style="list-style-type: none"> • Low gradient – Shallow with swift flowing, turbulent water. Partially exposed substrate dominated by cobble. Gradient moderate (less than 4%) • High gradient – Moderately deep with swift flowing, turbulent water. Partially exposed substrate dominated by boulder. Gradient steep (greater than 4%).
B. Non-turbulent	Channel units having low channel roughness, moderate gradient, laminar flow, and lack of surface turbulence.
1. Sheet	Shallow water flowing over smooth bedrock.
2. Run/Glide	Shallow (glide) to deep (run) water flowing over a variety of different substrates.
3. Step run	A sequence of runs separated by short riffle steps. Substrates are usually cobble and boulder dominated.
4. Pocket water	Swift flowing water with large boulder or bedrock obstructions creating eddies, small backwater, or scour holes. Gradient low to moderate.
II. Slow Water	Pools; slow, deep stream sections with nearly flat-water surface gradient.
A. Scour Pool	Formed by scouring action of current.
1. Trench	Formed by scouring of bedrock.
2. Mid-channel	Formed by channel constriction or downstream hydraulic control.
3. Convergence	Formed where two stream channels meet.
4. Lateral	Formed where flow is deflected by a partial channel obstruction (streambank, rootwad, log, or boulder).

5. Plunge	Formed by water dropping vertically over channel obstruction.
B. Dammed Pool	Water impounded by channel blockage.
1. Debris	Formed by rootwads and logs.
2. Beaver	Formed by beaver dam.
3. Landslide	Formed by large boulders.
4. Backwater	Formed by obstructions along banks (Recorded as a comment or note to mapping).
5. Abandoned Channel	Formed along main channel, usually associated with gravel bars (Not part of the main active channel – Recorded as a comment or note to mapping).

Table 6-2. Habitat Unit Attributes

Attribute	Description
Substrate	Dominant streambed and stream bank substrate types include: bedrock, boulder (> 10 inches), cobble (2.5 to 10 inches), gravel (0.12 to 2.5 inches), and silt.
Stream width	Average wetted width of a unit: On-the-ground mapping estimated by eye, periodically checking the estimates with a stadia rod or tape.
Stream depth	The maximum estimated depth of each pool categorized into three groups: 1 to 4 feet deep, 4 to 10 feet deep, and > 10 feet deep. Ground mapping methods also include an average pool depth estimate as well as a measured maximum depth.
Pool depth	Ratio of width of active (wetted) channel to total stream channel (floodplain) width: <ul style="list-style-type: none"> • Confined – shallow = channel width confined and stream shallow (< 4 feet) • Confined – deep = channel width confined and stream deep (> 4 feet) • Moderate confined = total channel width < 2 wetted channel widths • Unconfined = total channel width greater than or equal to 2 wetted channel widths
Channel confinement	Percent in which gravel or larger substrates are vertically embedded in sand or smaller substrates at the downstream end of pool habitat.
Pool tail embeddedness	Estimates the total amount of spawnable gravel for trout submersed in an area of adequate depth and velocity within one unit.
Spawning gravel	Estimates the largest patch of spawnable gravel for trout within one unit.
Spawning gravel patch size	Estimates the patch area of spawnable gravel for trout within one unit.
Cover type	Significant cover types in a unit if cover > 25 percent of the surface area. Cover type categories include: <ul style="list-style-type: none"> • Boulder cover • Vegetation cover

Attribute	Description
	<ul style="list-style-type: none"> • Wood cover
Fish migration barrier	Description and location of any potential barrier to upstream or downstream fish migration at approximately bankfull flows, including waterfalls, high velocity chutes or cascades.
Temperature	Grab samples of water temperature.
Tributary inflow	Estimate of the tributary inflow. Tributary locations will be noted during aerial video and photo mapping.
Landmarks	Description and location of any feature that might provide a location reference point.

6.2. SPAWNING GRAVEL MAPPING

Concurrent with habitat mapping, the location, size, quality, and particle distribution of spawnable gravel patches (i.e., coarse sediment) will be recorded. Spawnable gravel for trout species includes a sediment size composition between 0.2 and 3.9 inches (6 to 100 millimeters) located in an area with adequate water depth and velocity (i.e., greater than 9.4 inches [24 centimeters] and 15.7 to 35.8 inches per second [40 to 91 centimeters per second], respectively) during flows with a recurrence interval of up to 1.5 years (Bjornn and Reiser, 1991).

The location of each spawnable gravel patch will be identified with a GPS point and given a quality score based on embeddedness and particle characteristics (e.g., size, shape, angularity) roundness to evaluate overall quality of available spawnable gravel within the reach.

Length and width at each patch will be measured with a survey-grade laser rangefinder, and sediment depth will be measured with a Silvy rod or estimated relative to the depth to bedrock controls or the thalweg elevation. Bankfull width, wetted channel width, water surface slope, and length were measured in each sample reach.

Each patch will be described in geomorphic terms and assigned an activity class (e.g., active, semiactive, nonactive) based on relative position and indicators of sediment residence time. The D50 (median particle size), the D84 (particle size at which 84 percent of the grain size distribution is finer), and the D16 (particle size at which 16 percent of the grain size distribution is finer) will be visually estimated for each patch.

Spawnable gravel patches will be identified as being potentially spawnable under observed (i.e., low-flow) conditions or potentially spawnable under higher flow conditions. The potential for gravel-patch inundation under spill-flow conditions will be assessed using channel bed indicators such as the position/elevation of bankfull stage, which will be estimated using channel bed indicators such as the presence of a floodplain, the elevation of the highest active depositional feature, slope breaks or changes in particle size distributions, evidence of inundation features such as small benches, the staining of

rocks, exposed root hairs below and intact soil layer, which would indicate exposure to erosive flow, and the presence of lichens and certain other mature riparian tree and shrub species.

7.0 ANALYSIS

All habitat data will be entered into a Microsoft Excel spreadsheet and will be reviewed for quality control. The relative abundance of stream habitat types will be calculated, and pertinent stream habitat attribute values noted by stream reach. Habitat type composition will be calculated using the individual unit lengths as well as the number of representative habitat units. The substrate composition for the streambed will be presented along with the average stream width, average pool depths, and stream confinement.

Spawning gravel area and distribution will be evaluated. Calculations will include volume of spawning gravel by quality and total potentially suitable spawning gravel per mile or subreach of stream. Information gathered regarding channel morphology and coarse sediment supply and storage will be assessed in consideration of influences of the Project on hydrology and sediment supply downstream of Project dams.

8.0 SCHEDULE

Table 8-1. Schedule

Date	Activity
Spring 2022	Refine study sites
Summer–Fall 2022	Conduct field surveys
Winter 2022/2023	Compile study results and prepare draft report
TBD	Distribute draft report to Stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
TBD	Distribute final report in Final License Application

TBD = to be determined

9.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

10.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources Technical Working Group (TWG) Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding aquatic habitat and sediment characteristics. Notes and materials from these meetings are available at

www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 10-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Pre-Application Document and Notice of Intent.

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Table 10-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	CDFW	2/22/2021 Aquatic TWG	Habitat mapping methods need not be heavily quantitative in upper reaches of Lee Vining Creek. Qualitative habitat mapping is more appropriate to evaluate trout habitat. CDFW is most interested in viability and spawning time, so that operations can avoid interrupting spawning with large releases.	A qualitative habitat mapping approach is proposed in this study.
2	CDFW	2/22/2021 Aquatic TWG	CDFW is interested in what sediment is present, the D ₅₀ values for various stream reaches, and whether project operations are resulting in the loss of fines over time.	Methods proposed in this Study Plan will characterize baseline conditions of channel substrate (e.g., fines and coarse sediments) within each habitat unit (e.g., dominate substrate size) as well as spawning gravel distribution and particle size (i.e., D50, D84, and D16) throughout Project-affected stream reaches.
3	MLC	2/22/2021 Aquatic TWG	Mono Lake Committee is interested in determining to what extent fine sediment is trapped in Project reservoirs.	SCE has no indication that fine sediment accumulates in Project reservoirs in substantive quantities. As needed the Operations staff can remove fine sediment from the immediate area around intakes using hand-shovels; however, this need is infrequent. When reservoirs were lowered for geo-membrane installation, only minimal sediment accumulated against the dam was noted.
4	USFS	5/24/2021 Aquatic TWG	USFS expressed interest in using SWAMP protocols for surveying riparian vegetation.	SWAMP methods are designed for transect-based surveys at discrete sites, not longitudinal surveys (e.g., habitat mapping) of the stream. Therefore, this study includes estimates of dominant cover at each habitat unit.

CDFW = California Department of Fish and Wildlife; MLC = Mono Lake Committee; SCE = Southern California Edison; SWAMP = Surface Water Ambient Monitoring Program; TWG = Technical Working Group; USFS = U.S. Forest Service

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AQ-4 AQUATIC INVASIVE PLANTS
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Colonization of stream reaches by invasive aquatic plants and algae, including Didymo (*Didymosphenia geminata*), has the potential to modify aquatic habitat conditions, thereby altering stream communities.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Lee Vining Hydroelectric Project (Project) operations could affect the extent of invasive aquatic plants and algae including Didymo in reaches downstream of Project reservoirs.

3.0 STUDY GOALS AND OBJECTIVES

Assess the extent and distribution of invasive aquatic plants and algae, with a particular focus on Didymo, in stream reaches downstream of Project reservoirs.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

Surveys for invasive aquatic plants and algae will occur in the following stream reaches:

- Lee Vining Creek:
 - Between Saddlebag Dam and the confluence of Slate Creek (0.6 mile)
 - Between the confluence of Slate Creek and the confluence of Glacier Creek (2.2 miles)
 - Between the confluence of Glacier Creek and Ellery Lake (0.6 mile)
 - Between Poole Powerhouse and the Los Angeles Department of Water and Power diversion pool (5.7 miles)
- Glacier Creek between Tioga Dam and the confluence of Lee Vining Creek (0.7 mile)

5.0 EXISTING INFORMATION

Didymo has been known to occur in Lee Vining Creek since at least 2005, between Saddlebag Dam and the confluence of Slate Creek, and to a lesser extent between Slate Creek and Glacier Creek (Rost and Fritsen, 2014). No additional published material was available to determine the spatial distribution of Didymo or other invasive aquatic plant species in Project reaches.

6.0 STUDY APPROACH

6.1. SURVEY METHODS

Each reach listed above in Section 4.0 will be surveyed to provide a semi-quantitative estimate of spatial extent and percent cover of Didymo and other invasive aquatic plant

species (e.g., Uruguay water primrose [*Ludwigia hexapetala*], South American spongeplant [*Limnobium laevigatum*], alligatorweed [*Alternanthera philoxeroides*], Brazilian waterweed [*Egeria densa*], curlyleaf pondweed [*Potamogeton crispus*], Eurasian watermilfoil [*Myriophyllum spicatum*], coontail [*Ceratophyllum demersum*], and fanwort [*Cabomba caroliniana*]). Surveyors will work in pairs to estimate percent cover of invasive algae and aquatic plants while wading or walking through each site. Using modifications of standard methods for assessing aquatic plant cover (Madsen and Wersal, 2017), sub-sampling of representative transects will be used to visually assess cover, plant types, and dominant species at each site. A sampling design of 15 subsamples per stream reach was selected based upon statistical power analyses by Montana DEQ (2011) in assessing the ecological condition of wadeable streams. Percent coverage will be assessed visually at each site and recorded on standard survey forms, with quadrats used to develop quantitative areal cover estimates. A hoop approximately 30 centimeters in diameter will be randomly placed at 15 locations within each study reaches (see Section 4.0 above), for a total of 75 hoop locations. Percent areal coverage of the stream substrate by plant type will be estimated within each hoop. Submerged aquatic plants will be identified to species, subspecies, or variety, as appropriate, given phenology at the time of sampling. Voucher specimens will be collected to confirm identification of any species not identifiable in the field.

6.2. ANALYSIS

The longitudinal spatial extent of Didymo and other invasive aquatic species in Project reaches will be determined from the presence or absence of each species at each site with summary (reach-based) statistics to assess differences in cover and community composition. A map will be generated to present the estimated longitudinal spatial extent of invasive aquatic species in Project-affected reaches. Percent cover by plant type will be reported for each individual reach, and any longitudinal trends in percent cover throughout the Project streams will be noted. Survey results will be compared to historical data, and data from other studies will be incorporated as appropriate, including but not limited to *WQ-1 Stream and Reservoir Water Quality*, *AQ-2 Stream Fish Populations*, and *AQ-3 Aquatic Habitat Mapping and Sediment Characterization*.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Spring 2022	Refine study sites
Summer 2022	Conduct field surveys
Winter 2022/2023	Compile study results and prepare draft report
TBD	Distribute draft report to Stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report

Date	Activity
November 2024	Distribute final report in Final License Application

TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources Technical Working Group Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding aquatic invasive plants and algae. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the Technical Working Group and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Pre-Application Document and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
			No comments to date	N/A

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10.0 REFERENCES

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AQ-5 OPERATIONS MODEL
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations are currently constrained by the existing Federal Energy Regulatory Commission (FERC) license that specifies minimum flow requirements, which are based on the type of water year and the inflow into each reservoir. Additionally, reservoir lake levels are managed to balance recreation needs (and requirements of existing Federal Power Act, section 4e conditions) and winter drawdown needs to prepare for spring runoff. These constraints have significant impacts on operations and an understanding of how these constraints interact with future desired operations is needed.

Since 2016, current operations have optimized generation during periods of high demand or in response to grid-related events. Stakeholders have been seeking information on how frequently these events lead to increased flows below the Project and whether there are resource impacts from these releases.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Proposed studies will evaluate the potential impacts of the Project's continued operations on the existing aquatic and riparian environment. A tool is needed to inform these study efforts and to evaluate the feasibility of any proposed operational changes that may be considered a result of those efforts.

3.0 STUDY GOALS AND OBJECTIVES

- Develop a robust Operations Model (Model) to assist Southern California Edison (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 and results from other relicensing studies. To meet this goal, this Study Plan has the following objectives:
 - 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 Poole Powerhouse to accurately represent installed and dependable capacity for licensing documents.
- Determine the frequency, magnitude, duration, and seasonality of intraday releases from the Poole Powerhouse in response to resource optimization needs.
- Describe the stage/discharge relationship at discreet locations between the Poole Powerhouse and the LADWP diversion.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The study would include all Project influenced waters including diverted reaches, bypass reaches, and reservoirs beginning in the Project Area and continuing downstream to the Los Angeles Department of Water and Power (LADWP) Diversion Dam.

5.0 STUDY APPROACH

5.1. OPERATIONS MODEL

The Model will combine physical attributes of each component within the system with basin hydrology to calculate potential effects of alternative operational scenarios. Outcomes of the Model will be used in the development of potential environmental measures. Legal constraints will be the prioritized logic for resource allocation within the Model and will include legal and contractual requirements described by the 1933 Sales Agreement between Southern Sierras Power Company and LADWP . For purposes of the Model, these constraints will be considered constants that must be accommodated in all scenarios.

The platform for the Model will be Microsoft Excel, which will provide a transparent format for Stakeholders. As appropriate, other modeling tools will be incorporated if reservoir data warrant an alternative approach. Components of the Lee Vining hydro system that will be represented within the Model include reservoirs, diversions, tributaries and outlets, penstocks, and hydro stations.

Regulatory scenarios include bypass flow requirements below dams and diversions. A current set of rules describing how these constraints are incorporated for high, low, and mean water years will form the basic architecture for flow routing decisions produced by the Model. A base scenario will be developed to simulate existing operations and historical conditions for calibrating the Model, which will be used for comparing potential impacts associated with potential alternative scenarios.

The general sequence of steps to create and manage the Model are:

1. Create a schematic showing nodes of interaction and the primary interactions between each node.
2. Quantify and incorporate physical, regulatory, and legal constraints for each node.
3. Populate Model with historical flow datasets.
4. Calculate daily mean flows within and between each node based on existing operational procedures.
5. Calibrate against historical flow and generation records.
6. Develop documentation for the Model's use, specifically variable inputs for alternative scenarios, which will also describe the Model's configuration.

Because the hydrologic input dataset statistically impacts the outcome of model scenarios, the period of record will be reviewed with Stakeholders based on available period of record, appropriate temporal resolution, and adequate representation of current resource utilization.

5.2. LOWER LEE VINING CREEK HYDROLOGY

Currently, the gage at the Poole Powerhouse is limited to gathering daily flows, consistent with Ordering Paragraph D of the Project license that requires SCE to release (and measure) flows in compliance with Condition 4 of the U.S. Forest Service requirements. Data is not readily available for developing an intraday record of releases. In order to assess the frequency, magnitude, and duration of the releases, a mechanism will be sought to collect data.

Existing data from LADWP's diversion downstream will also be analyzed and cross-referenced to any data from SCE that can be developed in order to understand the degree of attenuation and travel time between the release at the Poole Powerhouse and the diversion.

6.0 SCHEDULE

The anticipated Study Plan development and implementation schedule is identified below.

Table 6-1. Schedule

Date	Activity
Fall 2021	Select Operation Model's Nodes and Confirmation of Model Tools
Spring 2022	Meet with resource agencies and interested Stakeholders regarding period of record for Model
Spring–Fall 2022	Initial Model
Winter 2022/2023	Compile study results and prepare draft report
Spring 2023	Distribute draft report to Stakeholders
Fall 2023	Stakeholder review and provide comments on draft report
Winter 2024	Resolve comments and prepare final report
November 2024	Distribute final report in Final License Application

TBD = to be determined

7.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

8.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document (PAD) and Notice of Intent, SCE hosted Aquatic Resources Technical Working Group (TWG) Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding hydrology and operations. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 8-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 4.38(b)(5) following issuance of the PAD and Notice of Intent.

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Table 8-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	MLC	Email dated 2/22/2021	<p>LADWP diverts water below the Project; A 2013 Settlement Agreement between the LADWP and the SWCRB implementing a court ordered restoration effort clarifies the use of the natural hydrograph downstream of the LADWP diversion to restore functional and self-sustaining stream systems with healthy riparian ecosystem components. This study is intended to determine if Project operations and facilities are able to deliver peak flows that may aid in restoration of habitat.</p>	<p>SCE agrees that an Operations Model is necessary to address a number of questions related to Lee Vining hydrology and to assess potential measures for the new license.</p> <p>SCE is not party to the agreement referenced by the Mono Lake Committee and has not adopted this as a study objective, because there is no Project nexus between SCE operations and settlement parties' ability to meet settlement agreement commitments downstream of the Project.</p> <p>The Operations Model that is being developed to look at Project hydrology and operations constraints should provide Stakeholders with information about the potential for the Project to provide peak flows.</p>
2	California Sports Fishing Association	TWG Meeting (3/29/2021)	<p>Wondered what type of platform was being considered for the Operations Model and if it will be publicly available.</p> <p>In the western Sierra, there have been good experiences with licensees sharing excel models, which allow relicensing participants to thoughtfully look at operational options and weed out approaches that are not feasible; this saves time for consultants/operators so they do not have to run all the options. CSPA is in favor of frequent communication and review of</p>	<p>SCE intends to develop the model as an Excel-based model assuming that rating curves for lake releases are in sufficient details.</p> <p>SCE intends for the model to be fully transparent; however, as a matter of policy is not intending to distribute the completed model for widespread use. SCE's experience is that having the model developer run the model and report results is a best practice that avoids confusion</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
			modeled scenarios.	about how to utilize the model and interpret. One approach is to convene this TWG to QA/QC the model and get consensus on the reliability of the outputs, and then work together to determine which scenarios to run.
3	California Sports Fishing Association	TWG Meeting (3/29/2021)	Have you considered the timestep of the model? CSPA recommends a daily model since that timestep will be important for many of the questions participants are interested in.	A better understanding of management goals will help us understand what timestep is needed. SCE also needs to review existing data to determine the feasibility of providing daily timesteps.
4	California Sports Fishing Association	TWG Meeting (3/29/2021)	Will you put together a hydrology dataset and share it with participants. There should be a description of general operations in the PAD, along with the hydrology dataset. It is important to establish that baseline understanding now.	Yes, that will be a prerequisite for the model. However, the hydrology dataset for the PAD may not be readily available. SCE will work with TWG members to iteratively review data and assess how it fits with model development.
5	USFS	TWG Meeting (3/29/2021)	USFS supports sharing the operations model; it is important for us to be able to run scenarios; the TWG can always review results together to ensure a shared understanding.	Comment noted.
6	California Sports Fishing Association	TWG Meeting (5/24/2021)	Regarding lower Lee Vining Creek hydrology, will daily averages be included in a study plan? Will it include a post-processing or analytical tool that will allow you to look at different operations within a given day? Will it provide a technical means to look at this (as opposed to a narrative description of general practices)? It could also be both. CSPA can share an example of analysis from the Water Board that looked at intraday operations to provide a general window into	The first step is to understand, describe, and talk about the ramifications of the operations. The Team is open to how this study ties to the Operations Model in that the Operations Model is currently focused on what controls releases on a daily basis; more discussion would be needed to understand how to expand it to cover intraday releases. SCE does not plan on factoring power prices and cues into a model as that is outside the scope of relicensing, in that those are largely

Comment Number	Entity	Date/Forum	Comment	SCE Response
			how operations followed load and market without getting into excessive detail.	economic decisions rather than strictly operational ones. SCE will review any examples that CSPA can provide for consideration.

CSPA = California Sportsfishing Protection Alliance; LADWP = Los Angeles Department of Water and Power; MLC = Mono Lake Committee; PAD = Pre-Application Document; QA/QC = quality assurance/quality control; SCE = Southern California Edison; SWRCB = State Water Resources Control Board; TWG = Technical Working Group; USFS = U.S. Forest Service

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9.0 REFERENCES

[Appropriate technical references will be identified.]

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AQ-6 LOWER LEE VINING CREEK CHANNEL
MORPHOLOGY
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Lee Vining Hydroelectric Project (Project) operations have the potential to affect fluvial processes and channel morphology in Lee Vining Creek between Poole Powerhouse and the Los Angeles Department of Water and Power (LADWP) Diversion (lower Lee Vining Creek).

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Project operations (e.g., flow regulation) potentially alter fluvial processes and channel morphology in lower Lee Vining Creek.

3.0 STUDY GOALS AND OBJECTIVES

This study has three primary goals: (1) assess the potential geomorphic effects of reducing sediment supply (e.g., coarse and fine) to and altering sediment transport in the lower Lee Vining Creek, (2) provide information required to assess potential ecological effects of any geomorphic changes in lower Lee Vining Creek resulting from Project operation, and (3) provide information for developing Protection, Mitigation, and Enhancement measures aimed at mitigating any coarse sediment imbalance.

The specific objectives of the study are to:

- Classify transport and response reaches in lower Lee Vining Creek using existing geographic information system (GIS) data, maps, and other remote sensing imagery; and
- Characterize channel morphology, fluvial processes, and coarse sediment (greater than 2 millimeters [mm]) transport rates at responsive study sites from Poole Powerhouse to the most downstream responsive study site that will be located upstream of the pool above the LADWP Diversion.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The Study Area includes Lee Vining Creek from the Poole Powerhouse outlet to the pool upstream of LADWP Diversion Dam. Specifically excluded from field study are areas where access is unsafe (very steep terrain or high streamflow).

5.0 EXISTING INFORMATION

Information is lacking to assess channel morphology or sediment supply and transport in Lee Vining Creek between Poole Powerhouse and LADWP Diversion.

6.0 STUDY APPROACH

6.1. COARSE-LEVEL CHANNEL STRATIFICATION AND SELECTION OF RESPONSIVE STUDY SITES

- The objectives of the coarse-level characterization of channel morphology are to (1) classify and organize stream reaches in the Study Area based on valley and channel morphology and (2) stratify the relative responsiveness (i.e., “sensitivity”) of river reaches to alterations in flow and sediment supply or transport. This task will involve assessing information from previous studies, topographic maps, aerial photographs, and a drone overflight. Based on a coarse-level analysis of the lower Lee Vining Creek channel, responsive study sites will be selected to more closely examine channel morphology and bed composition.
- Coarse-level channel stratification and selection of responsive study sites will involve the following steps: (1) review existing information and assemble aerial photographs, (2) derive terrain characteristics (e.g., channel slope, width, confinement, and longitudinal profile), (3) analyze changes in channel conditions from historical aerial photography, (4) collect existing conditions imagery and topography with an Unmanned Aircraft System, and (5) identify response reaches and select study sites.

6.2. RESPONSIVE STUDY SITE CHARACTERIZATION

The objectives of the responsive study site characterization are to quantitatively describe the channel morphology, bed surface texture, and grain size at selected sites in the Study Area. Each responsive study site will be 10 to 20 bankfull channel widths long, but not less than 0.2 mile long.

Data collected at each site will include:

- Three representative cross sections, noting location coordinates, standard field indicators, and other appropriate geomorphic characteristics (Harrelson et al., 1994);
- A long profile of the bed and water surface elevations;
- Mapping of all alluvial sediment deposits within the bankfull channel boundaries (mapping may also occur on low-lying floodplains where applicable);
- Sediment facies (delineation of the surface bed texture into distinct units by dominant and sub-dominant grain size classes) mapped onto aerial photographs following the conventions of Buffington and Montgomery (1999);
- Selective pebble counts (Wolman, 1954) to verify facies mapping and provide roughness parameters at cross sections used in the bed mobility analysis;

- A total of 3 bulk samples collected from alluvial sediment deposits; samples will be sieved in the field to $1/2 \Phi^1$ classes (i.e., 16, 22, 32, 45, 64, 90, 128 mm), Φ classes 11 mm and greater will be weighed in the field, and the fraction less than 11 mm will undergo laboratory particle-size analysis (Bunte and Abt, 2001); and
- Notation of other characteristics of the channel bed and banks, including indicators of channel stability (e.g., bank erosion, aggradation, or degradation).

6.3. CALCULATION OF BED MOBILITY AND SEDIMENT TRANSPORT

The amount of bed material transport and the residence time of bed material in a channel reach strongly influence the potential effects of reducing sediment supply on channel form and aquatic habitat. The objectives of this component of the study are to (1) evaluate critical discharges that mobilize the channel bed and (2) assess how Project operations affect the frequency and magnitude of sediment transport.

Bed mobility will be evaluated using field observation and sediment transport modeling. Field observations will provide results on what bed material grain sizes are mobilized at different discharges, as well as data necessary to calibrate reference Shields stress used in numerical modeling efforts.

Calculation of bed mobility and sediment transport will involve the following steps:

- Analyze hydrologic data (e.g., flow duration and peak flow analysis) for the responsive study sites. A database of unregulated and regulated hydrology will be developed for the Study Area using results of Study AQ-5 *Operations Model*. Where sediment transport sites differ from hydrological stations developed under Study AQ-5, adjustments to the hydrological database will be made using a drainage area proration method.
- Perform hydraulic analysis to determine shear stress and Shields stress for the study sites at different flow conditions. A surface-based sediment transport model will be applied to each responsive study site. The model will be used to (1) estimate surface-based dimensionless Shields stress (τ^*_{sg}) and (2) critical discharges (Q_{cr}) that mobilize the channel bed. The model will be applied using channel cross-section data, water surface slope, and roughness observations made during surveys at responsive study sites described above. Reference Shields stress (τ^*_r) will be assigned based on characteristics of the study sites and published values (i.e., Mueller et al., 2005).
- Deploy tracer rocks and monitor movement following high flow events. Tracer rocks with grain size approximately equal to the local surface D50 and D84 will be deployed at each site. Biologically significant grain sizes (i.e., spawning size gravel) may be selected as tracer rocks to better evaluate Project effects where D50 (median particle size) and D84 (particle size at which 84 percent of the grain size distribution is finer) are coarser than spawning size gravel. The tracer rocks will be resurveyed following peak flow events and/or high flows released during recreational and instream flow

¹ Phi (Φ) is a measure of particle size, where $\Phi = -\log_2(d)$ and d is particle diameter in mm.

studies. If sustained high flows prohibit safe access to survey painted rocks, the rocks will be surveyed once the river can be safely accessed in late spring or summer. If no movement is observed during these flows, the discharge threshold for observations will increase. If the marked rocks move and can be recovered nearby, they will be replaced. All marked rocks will be resurveyed at least once. Results of these observations will be used to calibrate τ^*r at each study site.

- Adjust sediment transport model. The sediment transport equation of Parker (1990) is based on field data from Oak Creek, Oregon, regarded as one of the best sediment transport data sets available for gravel-bedded rivers. The default reference τ^*r in the Parker (1990) equation, which is based on surface geometric mean grain size, is a surrogate for the well-known critical Shields stress. However, Mueller et al. (2005) have shown that τ^*r systematically increases with channel gradient and occurrence of very coarse grain sizes on the bed surface. Using an approach that combines field data and published relations for τ^*r based on channel geometry and grain size will allow for a reasonable calibration of the sediment transport model to each responsive study site. Results from this approach will be compared to results based on other published bedload transport relations (e.g., Mueller and Pitlick, 2005; Barry et al., 2004).

7.0 ANALYSIS

Analysis will include an assessment of potential sediment deficit downstream of Poole Powerhouse based on observations of channel sediment storage and morphology, as well as bed mobility and sediment transport calculations. Information gathered regarding sediment transport, channel morphology, and sediment supply and storage will be assessed in light of the influences of the Project on hydrology and sediment supply in lower Lee Vining Creek.

A reference conditions conceptual model will be developed for channel and sediment dynamics prior to dam construction, with emphasis on characteristics most likely to be affected by ongoing Project operations. Results from Study AQ-5 will provide information on unimpaired hydrology in lower Lee Vining Creek. Results will provide information on sediment supply and transport at responsive study sites and major tributary confluences in lower Lee Vining Creek under reference conditions. Based on this information, a conceptual model for channel function under reference conditions will be developed.

Current channel and sediment dynamics will be compared with those hypothesized under the reference model to assess the potential ongoing effects of the Project and other land uses. This analysis will determine if and to what downstream extent an ecologically important sediment deficit may exist and will provide information necessary to develop management measures aimed at mitigating any sediment imbalance.

8.0 SCHEDULE

Table 8-1. Schedule

Date	Activity
Spring 2022	Historical photograph and data review
Summer–Fall 2022	Conduct field surveys
TBD	Distribute draft report to Stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
November 2024	Distribute final report in Final License Application

TBD = to be determined

Data will be provided to Stakeholders upon completion of quality assurance/quality control of data.

9.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

10.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, Southern California Edison (SCE) hosted Aquatic Resources Technical Working Group Meetings on January 25, February 22, March 29, and May 24, 2021, which resulted in study requests from Stakeholders to address questions regarding aquatic habitat and sediment characteristics. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the Technical Working Group and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 10-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Pre-Application Document and Notice of Intent.

Table 10-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	CDFW	2/22/2021 Aquatic TWG	CDFW is interested in what sediment is present, the D ₅₀ values for various stream reaches, and whether project operations are resulting in the loss of fines over time.	Methods proposed in this Study Plan will characterize particle-size distributions (i.e., D ₅₀ , D ₈₄ , and D ₁₆) in lower Lee Vining Creek, as well as potential effects of Project operations on sediment (e.g., fine and coarse) supply. Also, please see Study AQ-3 <i>Aquatic Habitat Mapping and Sediment Characterization</i> .

CDFW = California Department of Fish and Wildlife; SCE = Southern California Edison; TWG = Technical Working Group

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TERR-1 GENERAL BOTANICAL RESOURCES
SURVEY
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Special-status botanical resources and U.S. Forest Service (USFS) Species of Conservation Concern are either known to or have the potential to occur in the Lee Vining Hydroelectric Project (Project) Area and may be affected by Project operations and maintenance. This includes the following listed species or species proposed for listing:

- Whitebark pine (*Pinus albicaulis*) (Proposed Federally Threatened)

Introduction and/or spread of invasive plant populations may occur due to Project maintenance activities.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

- Project maintenance activities could result in direct and/or indirect effects on sensitive natural communities (including riparian areas) and special-status plants or USFS Species of Conservation Concern.
- Project maintenance activities could result in the spread or introduction of invasive plants.
- If special-status botanical resources or USFS Species of Conservation Concern are found to be present within the Study Area (as defined in Section 4.0), the data will be examined to determine the effects of Project maintenance activities in the context of the most recent USFS Management Plan, the federal and state Endangered Species Acts, the National Environmental Policy Act, and the California Environmental Quality Act.

3.0 STUDY GOALS AND OBJECTIVES

Obtain additional information to supplement the existing information regarding special-status botanical resources in the Study Area by:

- Documenting the presence of species listed by the federal and/or state Endangered Species Acts or proposed for listing, e.g., whitebark pine;
- Documenting the presence of other special-status plants including species with a California Rare Plant Rank of 1 or 2 and USFS Species of Conservation Concern;
- Ground-truthing the existing USFS vegetation map (USFS, 2018), including identification of any sensitive natural communities;
- Incorporating results of the riparian monitoring study undertaken as part of the existing license; and

- Documenting non-native, invasive plants identified in the Inyo National Forest (INF) Invasive Plant Inventory Database (NRM – TESP/IS, 2018) and on the California Invasive Plant Council Inventory (Cal-IPC, 2017).

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The botanical resources study area will be used to document the presence of special-status plant species and the presence of invasive plant species, and ground-truth the USFS-mapped vegetation communities. The study area is shown on Figure 4-1 and includes a 50-foot buffer around all aboveground Project facilities and recreation areas including:

- Saddlebag Dam, spillway, and valve house
- Rhinedollar Dam, tunnel intake, spillway, and valve house
- Tioga Dam, Tioga Auxiliary Dam, and access road
- Poole Powerhouse
- Saddlebag Day Use Picnic/Fishing Site
- Saddlebag Lake Campground
- Saddlebag Lake Group Campground
- Saddlebag Lake Loop trailhead
- Sawmill Walk-in Campground
- Junction Campground
- Ellery Lake Campground
- Tioga Lake Campground

The riparian monitoring study area is shown on Figure 4-2 and includes three riparian monitoring reaches on Lee Vining Creek between Saddlebag Lake and the confluence of Lee Vining Creek with Slate Creek.

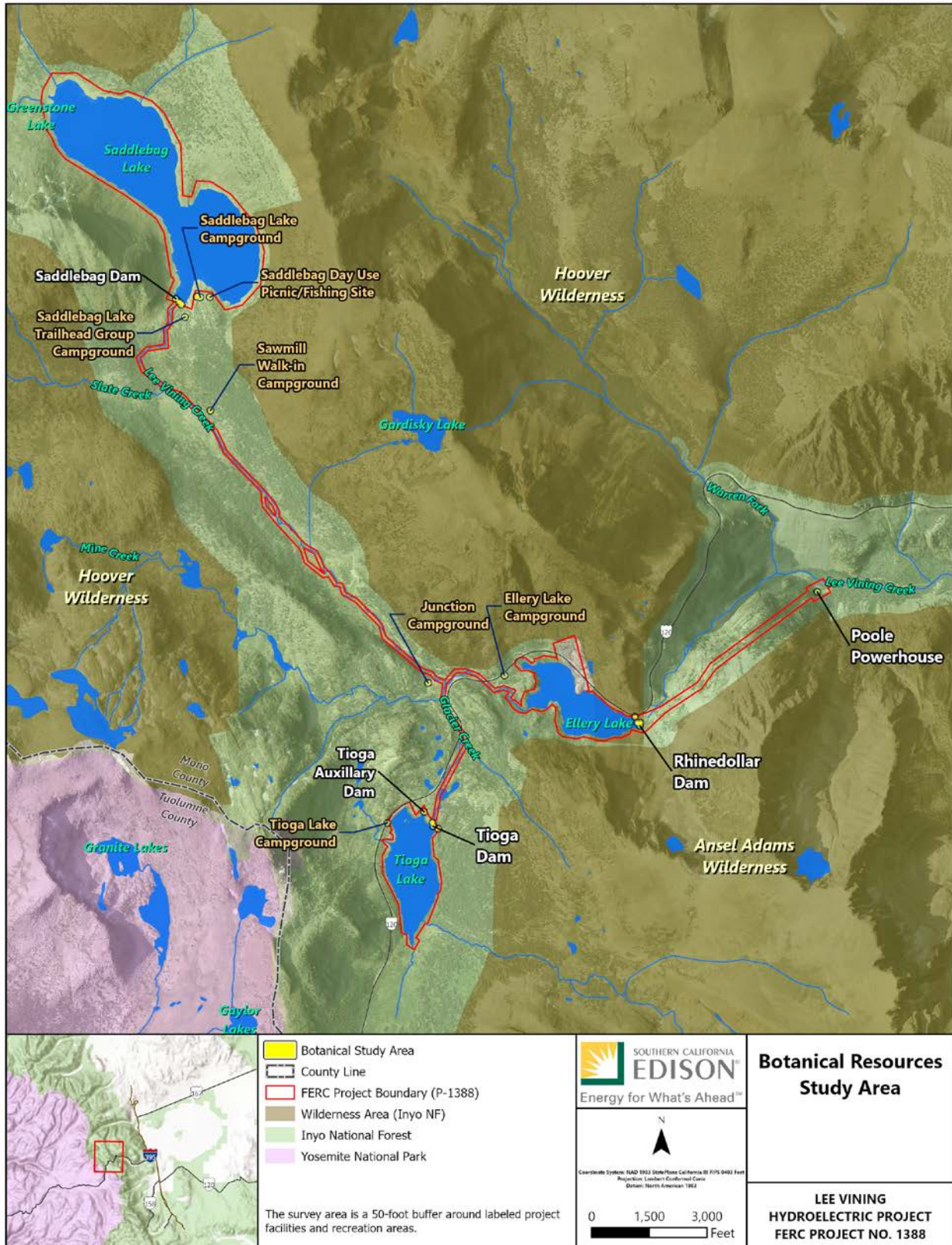


Figure 4-1. Botanical Resources Study Area

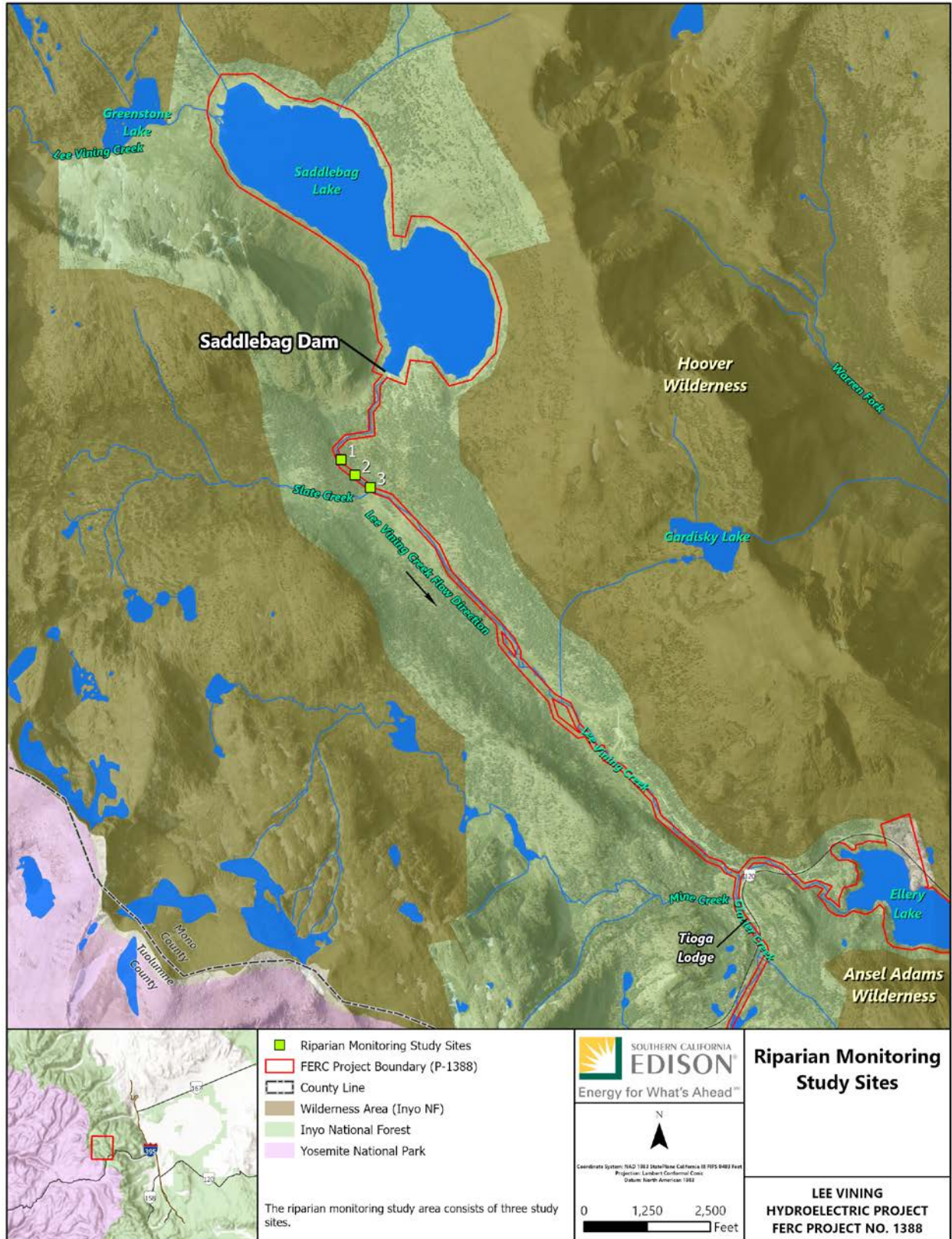


Figure 4-2. Riparian Monitoring Study Sites

5.0 EXISTING INFORMATION

Information on vegetation communities data, including riparian conditions monitored as part of the current license, is provided by the previously conducted field surveys and license-required monitoring studies (Psomas, 2010, 2013; Read, 2012, 2017). Keys and descriptions are from the USFS using the Calveg classification system. This is the preferred key by the INF and is used in this document for consistency with the Inyo National Forest Plan (USFS, 2018). In this system, differences between vegetation alliance types (also referred to as communities) are based on canopy cover as determined from aerial photography and satellite imagery.

Special-status plant occurrences within the Project Area have been documented by past studies (Psomas, 2010, 2013), the Environmental Assessment of Potential Cumulative Impacts Associated with Hydropower Development in the Mono Lake Basin, California (FERC Nos. 1388, 1389, 1390, 3259, and 3272; FERC, 1990), USFS records of rare plants (NRM – TESP/IS, 2018), whitebark pine range geospatial data (USFS, 2020), the California Natural Diversity Database (CNDDDB; CDFW, 2020), the Persistence Analysis for Species of Conservation Concern Inyo National Forest (INF, 2019), the California Native Plant Society's Inventory of Rare, Threatened, and Endangered Plants (CNPS, 2020), and the Consortium of California Herbaria (CCH, 2021). Since those studies were undertaken, new occurrences have been recorded to the CNDDDB and new species have been added to the federal and state special-status species lists; and others have been deemed sensitive by various government and non-governmental organizations.

Information on invasive plant occurrences has been provided by the USFS, including mapped infestations and treatment strategy for all currently known invasive plant species in the INF Invasive Plant Inventory Database (NRM – TESP/IS, 2018).

6.0 STUDY APPROACH

6.1. LITERATURE REVIEW AND HABITAT MAPPING

A literature review will be conducted to determine if any additional special-status botanical resources have been identified as having the potential to occur within the Project Area. This literature review will also verify the protective status of any of the previously identified special-status plants and will review any new literature on the ecology and life history of these resources. The literature review will be used to define potentially suitable habitat for special-status plants

Habitat mapping will include the following:

- A review of the existing USFS vegetation communities will be conducted to determine if any suitable habitat for special-status botanical resources has been identified within the Project Area. Vegetation alliances will be cross-referenced to defined habitats for special-status plants.
- Areas of potentially suitable habitat for special-status plants will be mapped over the Study Area.

6.2. FIELD SURVEYS

- Riparian monitoring surveys will follow existing methodology (Read, 2012, 2017) and include documentation vegetation conditions along established belt transects. Data on herbaceous species will be collected in 1-meter square quadrats within each transect. Data on tree and shrub parameters will be collected within the belts.
- Surveys will be floristic in nature and performed at appropriate times of the year to maximize the opportunity of observing special-status plants as determined by the literature review and in consultation with the relevant Stakeholders.
- Prior to the start of surveys, aerial photographs of each portion of the Study Area (at a scale of 1 inch equals 200 feet) will be prepared for field use. The field map will be uploaded onto a tablet or cell phone loaded with a mapping program (e.g., Avenza maps or ArcGIS Collector) in order to facilitate navigation and data collection. The field map will also include:
 - Known occurrences of special-status botanical resources
 - Areas of potentially suitable habitat for special-status botanical resources
- Biologists will perform pedestrian surveys to identify and map existing conditions and document any observed plants. Plant species will be identified in the field or collected for future identification. Plants will be identified to the taxonomic level necessary to determine whether or not they are a special-status or invasive species. Plants will be identified using taxonomic keys, descriptions, and illustrations in the Jepson eflora (Jepson Flora Project, 2020). Nomenclature of plant taxa will conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW, 2021, as amended) for special-status species and the Jepson eFlora (Jepson Flora Project, 2020) for all other taxa. Field surveys will focus on the following:
 - Natural communities previously mapped by the USFS will be verified or adjusted if conditions on the ground are not consistent with previously identified resources. During the pedestrian surveys, biologists will ground-truth the geographic information system (GIS)-based mapping of potentially suitable habitat as identified by the literature review. The extent of each vegetation community will be adjusted on the field map, if necessary.
 - Observations of special-status plant species identified in the Study Area will be documented either using a hand-held Global Positioning System (GPS) unit, the tablet/cell phone loaded with the field map, or on a hard-copy map. This will include all federal and state rare, threatened, or endangered species; USFS Species of Conservation Concern; and species with a California Rare Plant Rank of 1 or 2. Data will be collected on the number and phenology of individuals (estimated for large populations), microsite characteristics such as slope, aspect, soil texture, surrounding habitat, and associated species.

- Select invasive species of concern to the USFS that are identified in the Study Area will be documented (identified below). This includes all species on the INF Invasive Plant Inventory Database with a treatment strategy of 1 (eradicate) or 2 (control) and select species with a treatment strategy of 3 (contain). Discrete individuals/populations will be documented using a hand-held GPS unit, a tablet/cell phone loaded with the field map, or on a hard-copy map. Widely distributed species dispersed throughout a study site will be documented as present/absent in individual study sites. The number of individuals of each invasive species will be estimated.

Table 6-1. Invasive Species in the Study Area

Scientific Name	Common Name	USFS Treatment Strategy	Cal-IPC Rank
<i>Ailanthus altissima</i>	tree of heaven	1 – Eradicate	Moderate
<i>Bassia hyssopifolia</i>	five-hook bassia	3 – Contain	Limited
<i>Bromus rubens</i>	red brome	3 – Contain	High
<i>Bromus tectorum</i>	cheat grass	3 – Contain	High
<i>Centaurea diffusa</i>	diffuse knapweed	1 – Eradicate	Moderate
<i>Centaurea solstitialis</i>	yellow star-thistle	1 – Eradicate	High
<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	spotted knapweed	1 – Eradicate	High
<i>Cirsium arvense</i>	Canada thistle	1 – Eradicate	Moderate
<i>Cirsium vulgare</i>	bull thistle	3 – Contain	Moderate
<i>Convolvulus arvensis</i>	bindweed	3 – Contain	
<i>Dipsacus fullonum</i>	wild teasel	2 – Control	Moderate
<i>Elaeagnus angustifolia</i>	Russian olive	2 – Control	Moderate
<i>Halogeton glomeratus</i>	saltlover	2 – Control	Moderate
<i>Holcus lanatus</i>	common velvet grass	3 – Contain	Moderate
<i>Lepidium appelianum</i>	white-top	1 – Eradicate	
<i>Lepidium chalepense</i>	lens-podded hoary cress	1 – Eradicate	Moderate
<i>Lepidium draba</i>	heart-podded hoary cress	1 – Eradicate	Moderate
<i>Lepidium latifolium</i>	perennial pepperweed	1 – Eradicate	High
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	dalmatian toadflax	1 – Eradicate	Moderate
<i>Linaria vulgaris</i>	butter-and-eggs	1 – Eradicate	Moderate
<i>Rhaponticum repens</i>	Russian knapweed	1 – Eradicate	Moderate
<i>Robinia pseudoacacia</i>	black locust	3 – Contain	Limited
<i>Rubus armeniacus</i>	Himalayan blackberry	2 – Control	High

Scientific Name	Common Name	USFS Treatment Strategy	Cal-IPC Rank
<i>Salsola tragus</i>	Russian thistle	3 – Contain	Limited
<i>Saponaria officinalis</i>	bouncingbet	2 – Control	Limited
<i>Spartium junceum</i>	Spanish broom	1 – Eradicate	High
<i>Tamarix ramosissima</i>	saltcedar	2 – Control	High
<i>Tribulus terrestris</i>	puncturevine	2 – Control	Limited
<i>Ulmus pumila</i>	Siberian elm	2 – Control	

Cal-IPC = California Invasive Plant Council; USFS = U.S. Forest Service

6.3. REPORTING

Draft results will be prepared documenting:

- Results of the literature review
- Habitat mapping
- Pedestrian surveys
- Any relevant information collected during site visits
- Monitoring results conducted under the existing license (i.e., riparian monitoring surveys)

Field maps will be used to create a map of potentially suitable habitat and observations of invasive species and special-status botanical resources, including both special-status plant species and sensitive natural communities.

A California Native Species Field Survey Form will be completed for any special-status botanical resource observed during the pedestrian surveys. Each observation record will be submitted to the CNDDDB.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Summer 2021	Conduct riparian monitoring as part of current license
Spring 2022	Select study sites
Spring 2022	Meeting with resource agencies and interested Stakeholders regarding botanical resources
Spring 2022	Conduct desktop analysis

Date	Activity
Spring–Fall 2022	Conduct field surveys
Winter 2022/2023	Compile study results and prepare draft report
TBD	Distribute draft report to Stakeholders*
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
November 2024	Distribute final report in Final License Application

TBD = to be determined

*Data will be provided to Stakeholders upon completion of QA/QC of data.

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, Southern California Edison (SCE) hosted Terrestrial and Botanical Resources Technical Working Group Meetings on January 27, February 24, April 7, and May 26, 2021, which resulted in study requests from Stakeholders to address questions regarding botanical resources. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the Technical Working Group and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

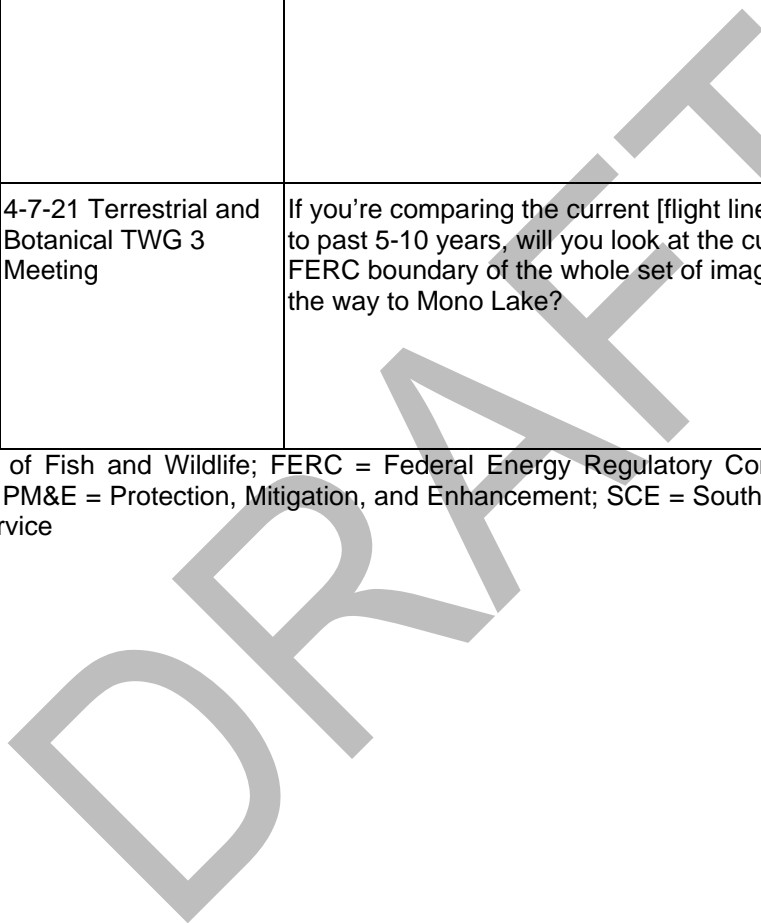
Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Preliminary Application Document and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	MLC, USFS	1-27-21 Terrestrial and Botanical TWG 1 Meeting	Request surveys for aquatic invasive species (e.g., Didymo and Eurasian milfoil)	Aquatic invasive plants and algae will be addressed in the Aquatic Resources TWG instead of Terrestrial Resources TWG.
2	USFS	2-16-21 Memorandum Re: Lee Vining Relicensing Study Titles	Be sure to incorporate whitebark pine as a special status plant target species; it is currently proposed for listing as Threatened under the ESA	Whitebark pine will be included in the botanical surveys.
3	USFS, CDFW	2-24-21 Terrestrial and Botanical TWG 2 Meeting	Why are there no riparian monitoring sites in the lower reaches downstream of Slate Creek?	Below Slate Creek, it is harder to determine natural versus project-related influence due to additional variables (e.g., accretion flow, glacier and snow-fed springs, seeps). Additional sites were originally reviewed but rejected. The three monitoring sites include a total of 10 transects.
4	CDFW	4-7-21 Terrestrial and Botanical TWG 3 Meeting	If we did the botanical study, found that there are invasive plants, and found that O&M vehicles are causing the spread, would the USFS address this in 4(e) conditions? Is that how it would proceed?	As we go further into developing the studies and make PM&Es, we would identify the appropriate management plans for this to be addressed. The USFS may implement those as a 4(e) condition. However, that particular condition (i.e., cleaning O&M vehicles for seeds) is already a practice that SCE does when moving from site to site.
5	USFS	4-7-21 Terrestrial and Botanical TWG 3 Meeting	Is the aerial imagery flight line taken specifically for riparian vegetation or the project overall?	It was originally specific to riparian vegetation, as part of the program that the USFS set up for SCE to follow; however, there are additional aspects looked at (e.g., stream meander/sinuosity).
6	CDFW	4-7-21 Terrestrial and Botanical TWG 3 Meeting	Are all of the flights conducted within the same season/months?	Flights occur during August each year.
7	USFS, CDFW	4-7-21 Terrestrial and	Will the riparian aerial imagery flight line data	NDVI data is not likely applicable, so SCE is

Comment Number	Entity	Date/Forum	Comment	SCE Response
		Botanical TWG 3 Meeting	be used to calculate the Normalized Difference Vegetation Index (NDVI)?	not planning to pursue this analysis. However, the flight line data may be made available for agency use. Using the infrared band, we would look at widths of the riparian vegetation and wet meadows, comparing it to 2016 and 2011 data. The images are high-resolution but would not be able to identify individual species.
8	USFS	4-7-21 Terrestrial and Botanical TWG 3 Meeting	If you're comparing the current [flight line] data to past 5-10 years, will you look at the current FERC boundary of the whole set of images all the way to Mono Lake?	We would focus on the FERC boundary. The scope of the analysis would be as appropriate to determine project effects. The analysis will be the same because these images are part of the current study, which needs to be separated from the relicensing new proposed studies. But we can use this older data as a reference point.

CDFW = California Department of Fish and Wildlife; FERC = Federal Energy Regulatory Commission; O&M = Operation and Maintenance; MLC = Mono Lake Committee; PM&E = Protection, Mitigation, and Enhancement; SCE = Southern California Edison; TWG = Technical Working Group; USFS = U.S. Forest Service



10.0 REFERENCES

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TERR-2 GENERAL WILDLIFE RESOURCES SURVEY
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Special-status wildlife species that could be affected by Lee Vining Hydroelectric Project (Project) Operation and Maintenance (O&M) activities include:

- Yosemite toad (*Anaxyrus canorus*)
- Riparian bird species habitat

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Data on the wildlife species present or with a high potential to be present within areas proposed for Project O&M activities in the Federal Energy Regulatory Commission (FERC) Project Boundary are needed to appropriately determine the existing conditions associated with terrestrial biological resources. If special-status wildlife or U.S. Forest Service Species of Conservation Concern are present, the data will be examined to determine the potential effects of the Project on wildlife in the context of the most recent *Land Management Plan for the Inyo National Forest* (USFS, 2019), the federal and state Endangered Species Acts, and the National Environmental Policy Act.

3.0 STUDY GOALS AND OBJECTIVES

The goal of this study is to develop the additional information necessary to supplement the existing information to address the identified issues. The study objectives are:

- Build a compendium of common; special-status; and rare, threatened, and endangered wildlife species occurring within Project areas that may be affected by proposed O&M activities.
- Identify rare, threatened, and endangered riparian birds in the area during general wildlife surveys.
- Determine persistence of known Yosemite toad populations within the Project Area.
- Determine potential effects and/or interactions between dispersed recreational use and terrestrial wildlife species of interest, including the Yosemite toad.
- Develop sufficient data for informal and formal consultation needs for U.S. Fish and Wildlife Service (USFWS) with respect to the Yosemite toad.
- Assess willow flycatcher nesting habitat downstream of the Project between Poole Powerhouse and the reservoir at the Los Angeles Department of Water and Power (LADWP) Diversion Dam using vegetation classification as the primary tool, to include review of aerial photography and ground-truthing.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The terrestrial wildlife study area is shown on Figure 4-1. It is comprised of the following Southern California Edison (SCE) O&M areas, including a 50-foot buffer:

- Saddlebag Dam and associated infrastructure
- Tioga Dam and SCE access road to Tioga Dam
- Rhinedollar Dam
- Poole Powerhouse and associated facilities, including garages, storage building, and tail race

The Yosemite toad study area consists of Yosemite toad locations known in the Project Area (Figure 4-2), specifically:

- The wet meadow southeast of Saddlebag Lake
- The California Natural Diversity Database (CNDDDB)-identified area at the northwest end of Saddlebag Lake
- Additional areas of potentially suitable wet meadow habitat as determined through updated literature reviews and reviews of aerial photographs and recent aerial and infrared imagery collected for the 2021 vegetation surveys

The willow flycatcher habitat assessment area consists of the portion of Lee Vining Creek downstream of Poole Powerhouse to the reservoir at the LADWP Diversion Dam (Figure 4-1).

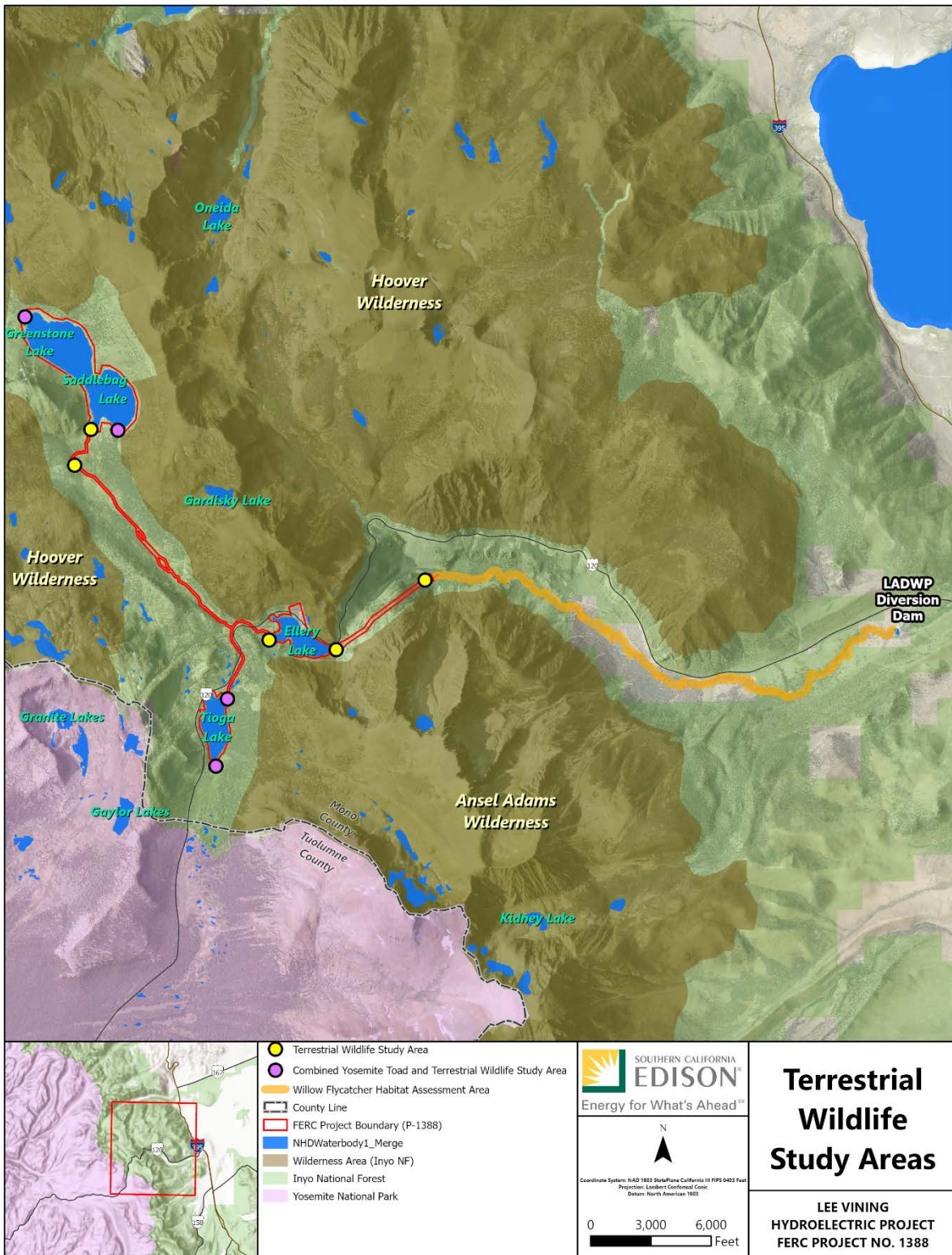


Figure 4-1. Project Location Map

5.0 EXISTING INFORMATION

Wildlife occurrences within the Project Vicinity have been documented in the CNDDDB (CDFW, 2020), USFWS Information for Planning and Consultation System (USFWS, 2020), the unpublished *At-Risk Aquatic and Terrestrial Species on Inyo National Forest* (INF, 2020), the *Final Environmental Assessment for Lee Vining Hydropower License* (FERC, 1992), and by past studies in the area (Psomas, 2006, 2010, 2013, 2014, 2018). Since the previous license application was completed, new species have been added to the federal and state Endangered Species Act lists, and others have been deemed special-status by various government agencies.

6.0 STUDY APPROACH

6.1. GENERAL WILDLIFE SURVEYS

6.1.1. PEDESTRIAN SURVEYS

- Surveys will be performed at appropriate times of the year (e.g., nesting season) to maximize the opportunity to observe special-status wildlife species as determined by the literature review.
- Prior to the start of the surveys, aerial photographs of each facility at a 1-inch to 200-foot scale will be prepared for field use and will include any known wildlife occurrences and areas of potentially suitable habitat for special-status wildlife.
- Biologists will perform pedestrian surveys within the terrestrial wildlife study area to (1) ground-truth the potentially suitable habitat maps developed during the literature review and (2) document any wildlife observations. Pedestrian surveys will be performed with binoculars to directly observe wildlife.
- Active searches for reptiles and amphibians will be conducted. Methods will include lifting, overturning, and carefully replacing objects such as rocks, boards, and debris.
- Mammals will be identified by visual recognition or evidence of diagnostic sign, including scat, footprints, scratch-outs, dust bowls, burrows, and trails.
- All Project facilities will be inspected for evidence of bat roosting.
- Observations of active or abandoned raptor nests will be recorded using a hand-held Global Positioning System (GPS) unit and mapped onto the field map.
- All wildlife species observed will be recorded in field notes to species (if possible) and location on field maps.

6.1.2. TRAIL CAMERA SURVEYS

- Biologists will install up to four trail cameras at locations most likely to capture wildlife—such as Sierra Nevada red fox and fisher—that may not be observable during

pedestrian surveys. Exact locations of cameras will be determined in consultation with the relevant Stakeholders.

- Cameras will be left set-up for a minimum of 1 year. Memory cards will be replaced every 3 to 4 months to download photos and document wildlife captured on camera. Camera placement will be reassessed after reviewing the second round of data.

6.2. YOSEMITE TOAD SURVEYS

Prior to conducting the field survey, the following sources will be reviewed to identify potential expansions of the Yosemite toad study area, per a comparison of attributes of known Yosemite toad breeding locations to potential O&M-affected portions of the Project Area:

- Aerial and infrared imagery collected in 2021 for vegetation surveys conducted for existing license requirements.

Focused surveys for the Yosemite toad will be conducted to determine the extent of the species in the Yosemite toad study area. Three survey visits will be conducted during the Yosemite toad breeding season (June 1 through September 30), with each visit spaced at least 3 weeks apart, and the first visit conducted approximately 1 month after snow melt sufficient to develop breeding habitat, such as wet meadow. Because weather and seasonal conditions vary at high altitudes, the timing of surveys will be adjusted to cover the toad's activity period. An additional (fourth) survey visit may also be conducted pending weather conditions and observations from the preceding three visits. The surveys will include diurnal searches to determine the presence of eggs, tadpoles, and adults. During the surveys, areas of previously identified breeding habitat will be examined for the presence of all life-stages (eggs, tadpoles, sub-adults, and adults). The Biologist will visually scan all shoreline areas and aquatic habitats and, if necessary, enter the water for further inspection. Where toads are found, the location of each population will be mapped. Surveys will take place during suitable weather conditions (i.e., air temperatures at least 50 degrees Fahrenheit, wind speeds not to exceed 5 miles per hour, and not under dense fog or during heavy rain).

6.3. YOSEMITE TOAD HABITAT-RECREATION INTERACTION SURVEYS

Pedestrian traffic associated with recreational use of areas within and adjacent to the occupied Yosemite toad habitat at Saddlebag Lake will be monitored in conjunction with the Yosemite toad surveys described in Section 6.2. Saddlebag Lake water levels fluctuate throughout the recreational season as part of SCE's operations to ensure downstream water deliveries. These surveys and the Yosemite toad surveys will be scheduled during anticipated periods of high-to-moderate visitation and different water levels. A biologist will visually track the abundance, path, and duration of recreational travel through and adjacent to the occupied habitat during both higher and lowered lake levels. The monitoring will be conducted discreetly to limit influence on the observed activity. Three 1-day monitoring visits will occur across multiple weekends coinciding with high-to-moderate visitation and the different lake levels.

6.4. WILLOW FLYCATCHER HABITAT ASSESSMENT

The portion of Lee Vining Creek downstream of Poole Powerhouse and upstream of the reservoir at the LADWP Diversion Dam will be assessed for the presence of suitable nesting habitat for willow flycatcher and relevant subspecies. The assessment will be conducted by reviewing the remote vegetation classification, then refining the potential habitat areas by reviewing aerial photography, then ground-truthing the areas likely to support potential nesting habitat.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
Spring 2022	Select study sites
Spring 2022	Meeting with resource agencies and interested stakeholders
Spring 2022	Conduct desktop analysis
Spring–Fall 2022	Conduct field surveys
Winter 2022/2023	Compile study results and prepare draft report
TBD	Distribute draft report to stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
November 2024	Distribute final report in Final License Application

TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, SCE hosted Terrestrial and Botanical Resources Technical Working Group (TWG) Meetings on January 27, February 24, April 7, and May 26, 2021, which resulted in study requests from Stakeholders to address questions regarding wildlife resources. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1). Stakeholders will have additional opportunities to provide comments on draft study plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Preliminary Application Document and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
	CDFW	April 7, 2021 / Terrestrial and Botanical Resources TWG Meeting	Request to add focused point-count surveys for riparian birds to Study Plan.	<p>Lack of Nexus: The baseline environmental conditions would stay the same as no new activities are proposed. Detailed population studies or determining species' absence is not relevant.</p> <p>Level of Effort: Not commensurate with resource question given no change in operations.</p> <p>Methods: Focal point counts do not inform questions around Project impacts and would require multiple years of study for non-Project-related purposes.</p>
	CDFW	April 7, 2021 / Terrestrial and Botanical Resources TWG Meeting	Request to add Yosemite toad mark/ recapture and <i>Batrachochytrium dendrobatidis</i> (Bd) studies to Study Plan.	<p>Lack of Nexus: The baseline environmental conditions would stay the same as no new activities are proposed. Detailed population studies or population health studies are not relevant.</p> <p>Level of Effort: Not commensurate with resource question given no change in operations.</p> <p>Methods: Mark/recapture and Bd surveys do not inform questions around Project impacts and would require multiple years of study for non-Project-related purposes.</p>

Bd = *Batrachochytrium dendrobatidis*; CDFW = California Department of Fish and Wildlife; SCE = Southern California Edison; TWG = Technical Working Group

10.0 REFERENCES

- CDFW. 2020. California Natural Diversity Database (CNDDDB) RareFind 5. Commercial Version, Biogeographic Data Branch. Accessed: April 20, 2020. Available online: <https://wildlife.ca.gov/data/cnddb>.
- FERC (Federal Energy Regulatory Commission). 1992. *Final Environmental Assessment for Hydropower License*. Lee Vining. FERC Project No. 1388-001. December.
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- Psomas. 2006. *Determination of No Effect on Listed Species for Maintenance Activities to Rhinedollar Dam, Southern California Edison Company's Lee Vining Creek Hydro Project, Mono County, CA*. Psomas: Santa Ana, CA.
- _____. 2010. *Determination of No Effect on Listed Species for the Biological Resources Evaluation Technical Report for the South Lake Dam, Agnew Lake Dam, Saddlebag Lake Dam, Tioga Lake Dam, and Auxiliary Dam Maintenance and Geomembrane Lining Projects*. Psomas: Santa Ana, CA.
- _____. 2013. *Summary of Biological Resources Determination of No Effect on Listed Species for Southern California Edison Company's Tioga Lake Dams Geomembrane Liner Installation Project, Mono County, California*. Psomas: Santa Ana, CA.
- _____. 2014. *Focused Survey Field Notes from Tanessa Hartwig for Tioga Lake Geomembrane Project*. Internal copy of staff field notes, July 23.
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- USFS (U.S. Forest Service). 2019. *Land Management Plan for the Inyo National Forest. Fresno, Inyo, Madera, Mono and Tulare Counties, California; Esmeralda and Mineral Counties, Nevada*. R5-MB-323a. Pacific Southwest Region. September. Accessed: August 24, 2020. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd664404.pdf.
- USFWS (U.S. Fish and Wildlife Service). 2020. Information for Planning and Consultation System (IPaC) Resource List [for the Project Area]. April 10. Available online: <https://ecos.fws.gov/ipac/location/index>.

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REC-1 RECREATION USE ASSESSMENT
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

This study would characterize existing recreation use and access associated with Lee Vining Hydroelectric Project (Project) resources and assess future recreation needs associated with the Project.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Under Title 18 Code of Federal Regulations Section 2.7, licensees whose projects include land and water resources with outdoor recreational potential have a responsibility to develop those resources in accordance with area needs. Existing Project facilities and operations have the potential to promote incremental use of the Project Area for recreation purposes.

All recreation facilities in the upper Lee Vining Canyon are currently owned and operated by the Inyo National Forest (INF). However, many of these sites are either partially within or directly adjacent to the existing Federal Energy Regulatory Commission (FERC) Project Boundary. INF has Federal Power Act Section 4(e) conditioning authority to prescribe conditions that may mitigate the impact of hydropower projects on INF system lands and thus could require mitigation for recreation induced by the presence of the Project. The initial phase (first study season) of the REC-1 study will evaluate which INF recreation facilities or activities have a potential connection to the Project and thus would warrant inclusion in the broader studies proposed in the second study season.

3.0 STUDY GOALS AND OBJECTIVES

- Determine which INF recreation facilities or activities have a potential connection to the Project and thus would warrant inclusion in the broader studies proposed in the second study season.
- For the study sites and activities identified:
 - Characterize existing recreation opportunities and visitation.
 - Characterize existing recreation visitor characteristics, needs, and preferences.
 - Estimate current recreational fishing effort in Project creeks and reservoirs.
 - Estimate future recreational demand and needs, including the need for additional recreation facility and access enhancements or enforcement actions.
 - Assess consistency of current recreation opportunities with the Desired Conditions, Goals, Standards, and Guidelines described in the *Land Management Plan for the Inyo National Forest* (USFS, 2019).

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The recreation use assessment study area and specific study sites based on activity are listed in Table 4-1 and shown on Figure 4-1 below.

Table 4-1. Study Sites

Site ID	Site Name	User Surveys (2022)	User Surveys (2023)	Creel Surveys	Spot Counts	Counters
1	Saddlebag Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TBD ^a
2	Saddlebag Lake DUA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TBD
3	Saddlebag Lake Trailhead	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No	<input checked="" type="checkbox"/>	TBD
4	Sawmill Walk-In Campground	<input checked="" type="checkbox"/>	TBD	<input checked="" type="checkbox"/>	TBD	TBD
5	Carnegie Station Trailhead	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
6	Gardisky Lake Trailhead	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
7	Junction Campground	<input checked="" type="checkbox"/>	TBD	<input checked="" type="checkbox"/>	TBD	TBD
8	Bennettville Trailhead	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
9	Tioga Lake Overlook Info Site	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No	<input checked="" type="checkbox"/>	TBD
10	Glacier Canyon Trailhead	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No	<input checked="" type="checkbox"/>	TBD
11	Nunatak-Tioga Tarns Trailhead	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
12	Tioga Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TBD
13	Nunatak Nature Trail	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
14	Ellery Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TBD
15	Warren Fork Trailhead	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
16	Big Bend Campground	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
17	Aspen Grove Campground	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD

Site ID	Site Name	User Surveys (2022)	User Surveys (2023)	Creel Surveys	Spot Counts	Counters
18	Boulder Day Use Area	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
19	Moraine Campground	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
20	Lower Lee Vining Campground	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD
21	Cattleguard Campground	<input checked="" type="checkbox"/>	TBD	No	TBD	TBD

DUA = Day Use Area; TBD = to be determined

^aTo be determined following 2022 user surveys and Technical Working Group consultation

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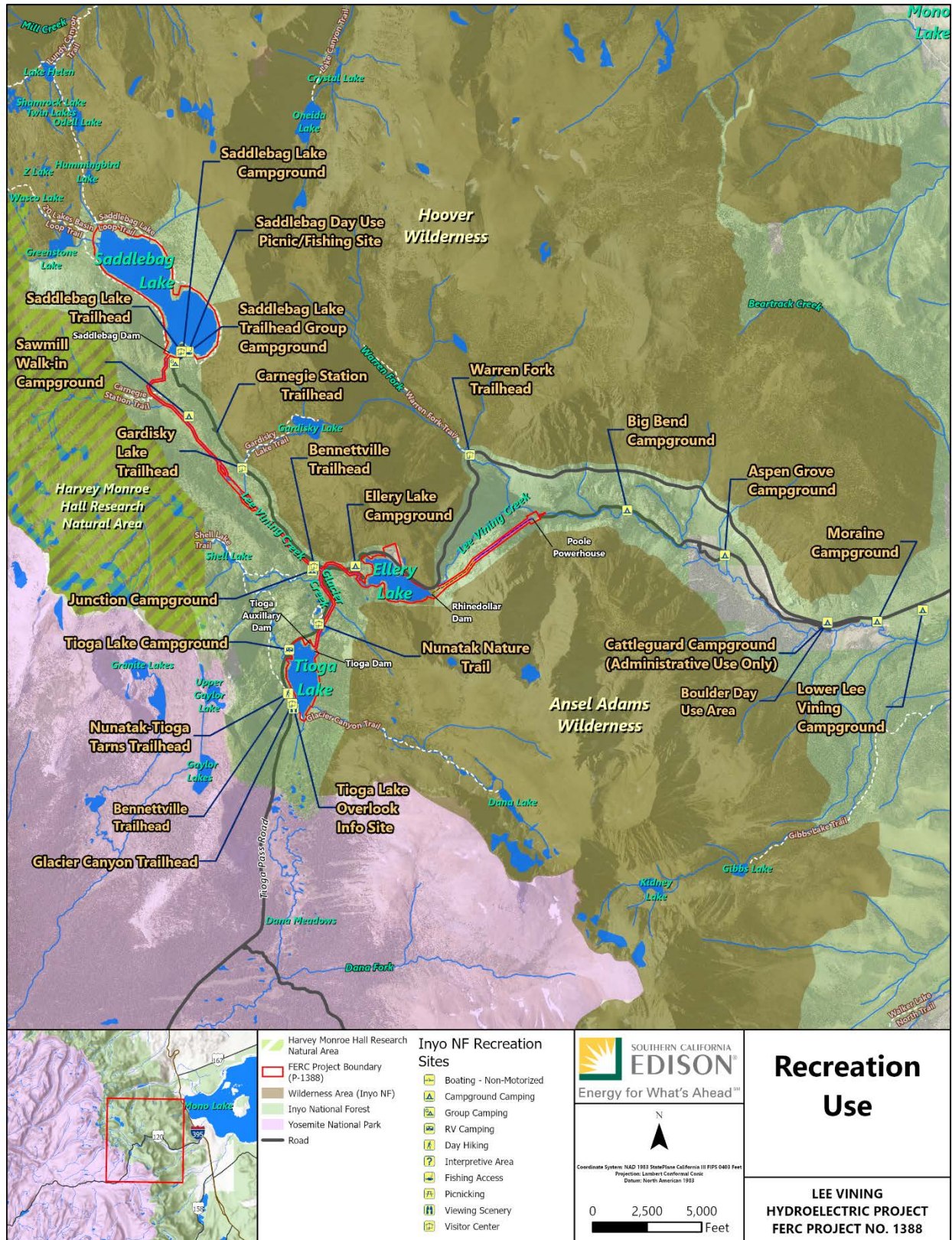


Figure 4-1. Survey and Data Collection Sites

5.0 EXISTING INFORMATION

- *2015 Licensed Hydropower Development Recreation Report*, FERC Form No. 80 (SCE, 2015)
- *2014 SCE Recreation Use Study Report for Eastern Hydro Division* (SCE, 2015)
- *2015 California Statewide Comprehensive Outdoor Recreation Plan* (SCORP) (CDPR, 2015)¹
- National Visitor Use Monitoring (NVUM) Reports for INF (USFS 2006, 2011, 2018)²
- INF Special Use Permits and Concessionaire Data
- *Inyo National Forest Alternative Transportation System Study* (USDA, 2013)
- California Department of Fish and Wildlife (CDFW) Stocking and Historical Creel Survey Data
- *Strategic Plan for Trout Management* (CDFG, 2003)
- *Fisheries Techniques, Third Addition* (Zale et al., 2013)

The study will also analyze relevant management plans for the area, including the *Inyo County General Plan* (IC, 2001) and the *Land Management Plan for the Inyo National Forest* (USFS, 2019).

¹ A 2020 California SCORP is currently under development and will supersede the 2015 California SCORP if available by the time of this analysis.

² 2021 NVUM data is currently being collected by the USFS and will also be analyzed once available.

6.0 STUDY APPROACH

To accomplish the goals and objectives of this study, Southern California Edison (SCE) is proposing a variety of data collection techniques to compile both historical and current recreation use and needs patterns for the Project. Historical use patterns will be determined by analyzing the studies, reports, and management plans described in Section 5.0 of this Study Plan. Current use and needs information will be collected through user surveys, creel surveys, spot counts, and traffic and trail counters. A description of each collection technique is provided below.

6.1. USER SURVEYS (2022–2023)

6.1.1. FIELD SEASON ONE (2022)

During the first study season (2022), user surveys will be conducted on-site using a survey form (available in both English and Spanish) at the sites identified in Table 4-1 above. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project and thus would warrant inclusion in the broader studies proposed in the second study season (2023). SCE will work with the Recreation and Land Use Technical Working Group (TWG) to develop parameters for determining nexus and final survey forms prior to the 2022 to 2023 field seasons.

6.1.2. FIELD SEASON TWO (2023)

For the sites identified as having a Project nexus from field season one (2022) surveys, additional visitor surveys will be conducted in the second study season using a survey form (available in both English and Spanish) to collect recreation user characteristics and demographics (e.g., origin, gender, age, and group size); satisfaction; type of activities; length of stay; and perception of crowdedness, site conditions, fees, and site needs. The data collected will be used to provide a general pattern of recreation use (e.g., type, volume, and daily) and assist in the development of recreation use estimates for the Project Area. The data will provide recreation user inputs on "crowdedness" and potential facility needs. Survey instruments, methods, and locations for winter surveys will likely be different from those for summer. SCE will work with the Recreation and Land Use TWG to develop final survey forms, methods, and study locations prior to the 2022 to 2023 field seasons.

Survey frequency will be designed with the intention of obtaining a representative sample of the population for each of the recreation sites identified in the season one (2022) surveys. A sampling day is assumed to be a 6-hour period generally ranging from 11 a.m. to 5 p.m. in an attempt to encounter the most recreationists and gather surveys from recreationists exiting in both the morning and afternoon. For each study site, sampling days will be randomly generated throughout the recreation season with a representative sample of weekday, non-peak weekend, and peak weekend days.

All survey clerks for both the general recreation surveys and creel surveys discussed below will be trained thoroughly as a means of quality control. Survey clerks will be

provided with detailed information on the study schedule, appropriate materials to aid in data collection, and direction on appropriate interviewing techniques and attire.

6.2. CREEL SURVEYS (2023)

Creel sampling will be conducted according to the standard protocols published in *Fisheries Techniques, Third Addition* (Zale et al., 2013). Surveys will utilize a field data sheet at each of the sites identified in Table 4-1 above to collect angler characteristics (e.g., origin, gender, age, and group size); determine current angler timing, effort, harvest, composition, and success; and estimate catch-per-unit effort by species. Creel surveys will be conducted during peak fishing season (between Memorial Day and Labor Day), with the intention of sampling two 4-hour blocks (morning and afternoon/evening) on each sampling day. For each study site, sampling days and times will be randomly generated to provide a representative sample of weekday, non-peak weekend, and peak weekend days as well as morning and afternoon/evening use.

All survey clerks for both the general recreation surveys and creel surveys will be trained thoroughly as a means of quality control. Survey clerks will be provided with detailed information on the study schedule, appropriate materials to aid in data collection, and direction on appropriate interviewing techniques and attire.

6.3. SPOT COUNTS (2023)

Spot counts will be conducted at each recreation site identified in Table 4-1 in conjunction with user surveys outlined in Section 6.1.2. Spot counts will allow for documentation of the number of vehicles and trailers at each parking area as a means of estimating the number of users currently at the site along with weather, time, and license plate data. SCE will work with the Recreation and Land Use TWG to develop a final spot count schedule prior to the 2023 field season.

6.4. TRAFFIC COUNTERS (2023)

The number and location of traffic counters will be determined in consultation with the Recreation and Land Use TWG prior to the 2023 field season.

6.5. TRAIL COUNTERS (2023)

The number and location of trail counters will be determined in consultation with the Recreation and Land Use TWG prior to the 2023 field season.

6.6. ANALYSIS AND REPORTING

The following sections provide a description of the approach to estimating existing and future recreational use, recreation site capacity and use density percentages, and recreation needs. A report will be prepared documenting the analysis results. The report will include a summary of all collected information and discussion of the analyses described below. The report will address all applicable Desired Conditions, Goals,

Standards, and Guidelines of the *Land Management Plan for the Inyo National Forest* (USFS, 2019).

6.6.1. CURRENT RECREATION USE AND DENSITY ESTIMATES

Average recreation use will be calculated utilizing spot counts, traffic and trail counters, and user survey data. For vehicle estimates, it will be assumed, on average, a total party size per vehicle of 2.5 people, as estimated in the INF's most recent NVUM report (USFS, 2018). Estimates will be categorized by site; site type; and activity based on weekday, weekend, holiday, morning, afternoon or evening use, as well as by monthly total use. For the purposes of this study, the carrying capacity for a recreation site is defined as the number of vehicles and boat trailers that can be parked at a recreation site at one time, based on the number of available parking spaces associated with the particular site. For paved parking lots, this will be achieved by counting the number of designated parking spaces available at the recreation site. For unmarked parking, maximum vehicle space will be estimated. Peak and average use density at each site will be estimated based on the average number of vehicles observed divided by the parking capacity of that site.

6.6.2. FUTURE RECREATION USE ESTIMATES

Estimated projections of future recreation use will be developed using the average annual increase in population growth over the past 10 years, as reported by the U.S. Census Bureau. These estimates will be augmented with discussion of trends reported in the 2015 SCORP (CDPR, 2015); 2006, 2011, 2016, and 2021 NVUM reports for INF (USFS, 2006, 2011, 2018), and the *Land Management Plan for the Inyo National Forest* (USFS, 2019). Estimated projections will be provided in 5-year intervals for the anticipated term of the license up to 50 years into the future.

While it is acknowledged that future changes in the supply of recreation resources, either in their quantity, accessibility, and/or quality, may influence future demand and use, the demand analysis undertaken for this study does not attempt to predict future changes or how they might specifically affect levels of use at Project facilities. Therefore, the demand analysis results should be viewed as a general guide of potential future recreation pressure developed for planning purposes only.

6.6.3. RECREATION NEEDS ASSESSMENT

Estimates of future Project-related recreational demand and needs will rely on the results provided by the recreation use assessment and visitor surveys for user preferences and opinions on needs and crowding.

The need for new recreation opportunities, new site development, or modification of existing recreation resources will be assessed based on the results of facility condition assessments, site capacity estimates, and user surveys that provide user preferences and opinions on needs and crowding at each site and the Project Area as a whole. Based on these results, recommendations will be proposed to address future Project facilities and operations, consistent with the Desired Conditions, Goals, Standards, and Guidelines

described in the *Land Management Plan for the Inyo National Forest* (USFS, 2019), to then be discussed with the Recreation TWG.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
2021	Continue consultation with TWG to finalize survey instruments and methods
2022–Spring/Summer	Conduct initial user surveys to determine primary reason for visit
2022–Winter	Consult with TWG to determine study sites and methods for 2023 field season
2023–Spring/Summer/Winter	Conduct season two studies
2024–February/March/April	Compile study results and prepare draft report
2024–May	Distribute draft report to TWG
2024–June/July	TWG review and comments
2024–August/September/October	Resolve comments and prepare final report
2024–November	Distribute final report in Final License Application

TWG = Technical Working Group

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed for the final Study Plan to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, SCE hosted Recreation and Land Use Resources TWG Meetings on January 28, February 25, April 1, and May 27, 2021, resulting in study requests from Stakeholders to address questions regarding recreation use and needs. Notes and materials from these meetings are available at <http://www.sce.com/leevining>. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Preliminary Application Document and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	Nick Buckmaster CDFW	1/28/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> The Project creates reservoirs, and our department needs to stock those to maintain the value of them to fishermen. Our stocking plan is based on use data, so we will be asking for a study to quantify fishing pressure on reservoirs to inform mitigation measures for stocking. Currently, we have no idea how many fishermen are using the lakes other than a qualitative guess. To capture the target species, catch rates would be the intent. The study would mainly focus on the reservoirs, though we will want to look at creeks as well.	SCE received your formal study request on 2/8/2021 and incorporated it into Study <i>REC-1 Recreation Use Assessment</i> .
2	Katie Goodwin Access Fund	1/28/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> There is a substantial amount of ice climbing that happens below Ellery Lake. Where are the flows coming from and will they change? What fact finding do I need to do to figure out what's happening there? Travel to the climbing site would be over snow, not on trails, resulting in less impacts on vegetation and soil. I would be happy to provide this information. It's a unique area for ice climbing.	SCE is not aware that Project operations contribute to the ice climbing environment below Ellery Lake. The integrity of flowlines is inspected regularly as part of the dam safety program. SCE would welcome any information that may inform future inspections. SCE is proposing to characterize winter use as part of its <i>REC-1 Recreation Use Assessment</i> and will work with the TWG to determine method and sites for analysis.
3	Sheila Irons USFS	1/28/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> In the past, there have been conflicts at Saddlebag Lake between the resort's water taxi service and lake levels. Since there are no lake level requirements on Saddlebag Lake, the resort sometimes has issues with lake levels being too low to operate.	SCE reviews instream flows and resulting lake levels at Saddlebag Lake annually in April and August with the USFS. SCE will characterize use at the resort, including its water taxi service as it relates to lake levels, as part of its REC-1 study using SCE lake level data and USFS concessionaire data.
4	Bartshe Miller MLC	1/28/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> I'm interested in the pullouts at Ellery and Tioga Lakes. Are those in the Project area? Are there	Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of

Comment Number	Entity	Date/Forum	Comment	SCE Response
			opportunities to organize/clarify traffic there, manage people, and include interpretive displays since the pullouts attract people to observe the scenery? What about adding restrooms?	Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.
5	Nick Buckmaster CDFW	2/8/2021 Formal Study Request (Emailed Document)	[Formal request for creel survey]	SCE received your formal study request incorporated it into the Study <i>REC-1 Recreation Use Assessment</i> . Creel sampling will follow the standard protocols published in <i>Fisheries Techniques, Third Addition</i> (Zale et al., 2013), and analysis will include review of CDFW's <i>Strategic Trout Management Plan</i> . Methods will include surveys and spot counts at both the Project reservoirs and campgrounds located on creeks within the FERC Project Boundary (Sawmill Walk-in and Junction Campgrounds).
6	Nick Buckmaster CDFW	2/25/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> To summarize the Creel Census study request, we don't have a good estimate of fishing pressure at the Project. The reservoirs/resources are essentially created by the Project. We want to determine what the users would like to see, what fish they want to catch, etc. We want to use professional standards for a good robust creel survey, the industry standard.</p> <p>We also want to include areas around campgrounds, but in general we are more</p>	SCE received your formal study request incorporated it into the Study <i>REC-1 Recreation Use Assessment</i> . Creel sampling will follow the standard protocols published in <i>Fisheries Techniques, Third Addition</i> (Zale et al., 2013), and analysis will include review of CDFW's <i>Strategic Trout Management Plan</i> (CDFG, 2003). Methods will include surveys and spot counts at both the Project reservoirs and campgrounds located on creeks within the FERC Project Boundary (Sawmill Walk-in and Junction Campgrounds).

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>concerned with the lakes. Consider doing a “roving creel” or “car creel” to estimate differential pressure between lakes and streams. The assumption is that fishermen using campground areas and creeks are also fishing in the lakes. We could get a rough count of creek fishers while doing the lake assessment.</p>	
7	Katie Goodwin Access Fund	2/25/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> It is already well known, but this year especially this added camping pressure is a product of needing to have permits to enter Yosemite. There is a lot of dispersed camping anywhere you can fit a vehicle. The permit requirement was reinstated for 2021, it was implemented as a response to Covid-19.</p>	<p>Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.</p>
8	Bartshe Miller MLC	2/25/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> We are putting together our study requests still. Possibility of focused recreation use studies at Saddlebag, Ellery pull out, and at north end of Tioga Lake in regards to vehicle density on dirt areas. There is the possibility of non-point source pollution and run off (dumping of coolers, pet waste, etc.) at these pullouts increasing due to recreation/vehicle use at these pull outs.</p> <p>Pulling off in these areas is due to the scenic views at the reservoirs, so they seem related to the Project. Camping right at the shoreline of Saddlebag and Tioga Lakes is increasing, with no</p>	<p>Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
			buffer between vehicles. This isn't happening at Ellery Lake because there is no direct driving access to the shoreline.	counters may be needed during REC-1 efforts in the 2023 field season. The nexus between water quality impacts from non-Project pullouts is discussed in Study <i>WQ-1 Stream and Reservoir Water Quality</i> .
9	Katie Goodwin Access Fund	2/25/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Regarding recreation use at Saddlebag Lake, I use that trail a lot. I noticed last year that there is a ferry across Saddlebag Lake that cuts out about two miles of easy walking. There are impacts from people offloading from the ferry on Saddlebag Lake and scattering across the tundra grass there. There is degradation of trails and vegetation there from picnicking and offloading. There is less camping, more backpacking, fishing, and picnicking happening. Wondering if it's worth looking at since there are a lot of people using the area.	A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes), including the use at the back end of Saddlebag Lake. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season. The REC-1 study will also characterize water taxi use at the lake using USFS concessionaire data.
10	Monique Sanchez USFS	4/1/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Are recreation studies only proposed in the spring/summer? We may not be capturing all of the Project-induced recreation if we only focus on one time of year.	SCE will work with the TWG to develop an appropriate schedule for REC-1 studies that will capture relevant recreation use throughout the recreation season(s), understanding that the type of use changes depending on time of year (spring/summer compared to winter).
11	Adam Barnett USFS	4/1/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> We are working on additional details for those three studies using your form. There are other things we'd like you to capture. Some of the use is outside of the currently defined Project boundary but has a strong nexus. We want to make sure those things aren't overlooked in analysis, such as Poole Powerhouse access road and access areas to recreation areas along the road. Also include an assessment of use of Project area when people come up from the campgrounds farther	SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (Recreation Use

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>downstream on Lee Vining Creek; we would like a better understanding of whether people using these downstream campgrounds are using the Project area for recreation. We are putting these questions/concerns into a format for the relicensing team to use.</p>	<p>Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p>
12	Bartshe Miller MLC	4/1/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> Considering road pullouts, whoever is responsible for them, they do cross between both CalTrans and SCE. The pullouts affect the Project area, viewshed and recreation experience, bathrooms, etc. The recreation use study will probably cover it, but existing facilities clearly don't meet the needs of visitors (especially bathrooms). Point source pollution is still an issue. Dispersed camping and overnight parking are also being invited in these areas. The conditions/facilities of pullouts around the Project area are promoting incremental use. I'm thinking specifically of the Ellery and Saddlebag pullout locations.</p> <p>SCE isn't responsible for the increase in travelers, but SCE is the custodian for this part of the forest where their Project is located. The Project encourages visitors to stop along the way. People can't reasonably enjoy the area as they have in the past given the lacking existing facilities.</p> <p>People stop where there are pullouts, or any spaces off the road to park, those are invitations to recreate for dog walking, launching a kayak, taking photos, etc.</p>	<p>Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.</p>
13	Monique Sanchez USFS	4/1/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> It seems like we are assuming a lot, that people are there not for the Project or are using the pullouts as an invitation. There are a lot of</p>	<p>SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>unknowns. We need to think about how to ask these questions. Unless there is a study that defends it, we need to take a deeper look. We can also come up with a recreation plan where we come back together at look at these needs every so often.</p>	<p>surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (<i>REC-1 Recreation Use Assessment, REC-2 Existing Recreation Facilities Condition Assessment</i>) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p>
14	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>Evaluate recreation use of lower Lee Vining canyon campgrounds (Big Bend, Aspen, Moraine, Lower Lee Vining, Cattleguard) to determine dependence of users on project stream flows and project reservoirs.</p> <p>Evaluate public use of recreation facilities, trails, and dispersed camping surrounding Saddlebag Lake and along the Saddlebag Lake access road including backpacking and camping use at the north end of the lake.</p>	<p>SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (<i>Recreation Use Assessment, Facilities Condition Assessment</i>) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p> <p>A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes), including the use at the back end of Saddlebag Lake. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season. The</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
				REC-1 study will also characterize water taxi use at the lake using USFS concessionaire data.
15	USFS	4/22/2021 Formal Study Request (Emailed Document)	Evaluate public education needs for areas closed to dispersed camping.	Information collected for dispersed use at the Project reservoirs will be used in post-field season TWG discussions to determine whether public education or management efforts are needed.
16	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include use of Saddlebag Lake water taxi service in study analysis.	SCE reviews instream flows and resulting lake levels at Saddlebag Lake annually in April and August with the USFS. SCE will characterize use at the resort, including its water taxi service as it relates to lake levels, as part of its REC-1 study using SCE lake level data and USFS concessionaire data.
17	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include the following site-specific recreation activities in the study design: Ellery Lake access to Ellery Bowl for backcountry skiing and climbing...	SCE will work with the TWG to incorporate Ellery Bowl into winter data collection efforts during REC-1 study efforts in the 2023 field season.
18	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include the following site-specific recreation activities in the study design: ... Kayaking at all lakes and the need for put-in development...	REC-1 surveys conducted during the 2023 field season will be designed to collect information regarding current kayaking use or desired use at the Project reservoirs.
19	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include the following site-specific recreation activities in the study design: ... Dispersed camping around Ellery outlet and waterfall...	A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes), including use below Rhinedollar Dam/Outlet. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.

Comment Number	Entity	Date/Forum	Comment	SCE Response
20	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include the following site-specific recreation activities in the study design: ... Ice climbing use on Poole Powerplant Rd which is plowed during winter for plant access.	See response to comment number 2 above.
21	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of winter recreation activities.	SCE will work with the TWG to develop an appropriate schedule for REC-1 studies that will capture relevant recreation use throughout the recreation season(s), understanding that the type of use changes depending on time of year (spring/summer compared to winter).
22	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>The proposed project includes the Poole Power Plant Road which was likely built as part of the creation of the Lee Vining hydropower project. The new road provided additional access to Lee Vining creek and opened a new area of the Inyo NF to recreation development including Big Bend, Aspen, and Moraine campgrounds.</p> <p>The Lower Lee Vining and Cattleguard campgrounds may also have a nexus to the proposed project if this study finds that a significant portion of campground users stay here in order to recreate in the project vicinity, such as fishing at Tioga, Ellery, or Saddlebag Lakes.</p> <p>In addition, there is likely a nexus to recreation facilities on the Saddlebag Lake road which provides easy access to Saddlebag group camp, campground, trailheads, picnic area, boat ramp, Sawmill campground, and Gardisky Lake trailhead. Many of these facilities depend directly on the existing lake and the other facilities depend on the presence of the road.</p> <p>There is also a nexus to recreation facilities in the</p>	<p>SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (Recreation Use Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p> <p>The Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used predominantly for Project purposes, such as for operation and maintenance of Project facilities or access to Project-related recreation opportunities.</p> <p>A dispersed use assessment will be conducted</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>vicinity of Tioga and Ellery lakes including Ellery Lake Campground, Tioga Lake Campground, and Tioga Lake overlook/Glacier Canyon trailhead. These facilities were built after the proposed project and located in relationship to the project reservoirs in order to provide for their use by the public.</p> <p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake.</p> <p>NFS trails: Saddlebag Lk trail, Glacier Canyon trail User-created trails: trails around project lakes and along creeks</p>	<p>in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) but not along the creeks. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.</p>
23	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake.</p> <p>NFS trails: Saddlebag Lk trail, Glacier Canyon trail User-created trails: trails around project lakes and along creeks</p>	<p>SCE will include all developed USFS sites listed in this request as part of its Season 1 user surveys to determine the primary reason for user visits and whether there is a nexus to the Project itself.</p> <p>SCE will include an assessment of Saddlebag Lake Trail in Season 2 use and needs studies but does not propose including Glacier Canyon Trail in any detailed assessments. The trailhead facilities for Glacier Canyon Trail and any informal spurs leading around Tioga Lake will be studied as part of Season 2 activities, but no assessment of the trail or trail use itself is being proposed as the draw is the wilderness and not Tioga Lake.</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
				SCE proposes to conduct a dispersed use assessment around Ellery, Saddlebag, and Tioga Lakes. This will include the dispersed camping and pullout areas previously identified in TWG discussions. This will not include an inventory of use along the creeks.
24	USFS	4/22/2021 Formal Study Request (Emailed Document)	Provide historic context for recreation facility development and hydropower facility development including an analysis of the timeline and location of recreation facilities in relationship to project reservoirs. For example, the construction of Big Bend, Aspen, and Moraine campgrounds after the construction of the Poole Power Plant road.	SCE does not understand how this context would inform discussions of Project nexus since the current baseline is the existing Project facilities. The REC-1 phased approach will assist in determining nexus through user survey implementation.
25	Monique Sanchez USFS	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Usually landscape architects work with the visual study team to figure out how the visual quality impacts visitors' experience. We have done this in other projects.	SCE understands that there is usually a crossover between recreation user surveys and visual surveys and an opportunity to efficiently combine efforts. Visual surveys will be considered in the selection of REC-1 survey and data collection methods and locations for the 2023 field season.
26	Monique Sanchez USFS	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> What are the proposed study seasons, how will you determine if you'll do a second season for each Study? Since we had such an abnormal amount of use in 2020 because of COVID-19, I'd like to hear back from our recreation specialists, maybe the first season would have odd results. It could be a high or low use year in 2021/2022. Having both seasons of data would help us get a better understanding of what is going on.	No data will be collected in 2021; study seasons will begin in 2022. SCE understands that we are currently in a unique environment and that atypical recreation use and/or unexpected events that would affect the proposed studies are highly likely in the coming years. SCE will continue to coordinate with the TWG and rely on USFS staff for guidance on whether studies should be altered or re-scheduled as we move through the study season.
27	Bartshe Miller MLC	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Expressed concerns about a large number of vehicles driving and parking in Saddlebag Lake	Vehicle intrusion at Ellery and Saddlebag Lakes will be generally assessed as part of the REC-2 dispersed use assessment, though

Comment Number	Entity	Date/Forum	Comment	SCE Response
			bottom when water levels are low. The access point observed is near the concessionaire water taxi. Where is this being addressed, is the concessionaire involved, and how does it affect SCE's operations?	there may be crossover during LAND-1 discussions regarding Project roads and road condition. USFS concessionaire data, operations, and special use permits will also be reviewed and characterized as part of REC-1 and REC-2 studies. The nexus between water quality impacts from non-Project pullouts is discussed in Study WQ-1 <i>Stream and Reservoir Water Quality</i> .
28	Bartshe Miller MLC	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Mono County is pursuing a grant to improve the road and infrastructure up to Saddlebag Lake. This could be a problem if not done with inter-agency collaboration and SCE to help manage some of the issues we are studying here. The road is beyond repair, so they are considering paving it.	SCE will continue to monitor the proposed construction to determine whether improvements contemplated in TWG discussions or following field data collection may be incorporated into the effort. The proposed construction will also be monitored in case construction schedules conflict with proposed user surveys, as construction may result in temporary closure of certain INF sites to the public.

CDFW = California Department of Fish and Wildlife; INF = Inyo National Forest; MLC = Mono Lake Committee; SCE = Southern California Edison; TWG = Technical Working Group; USFS = U.S. Forest Service

10.0 REFERENCES

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- SCE (Southern California Edison). 2015. Form 80 and Recreation Report Filing: 2014 Recreation Use Study Report for Eastern Hydro Division.
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REC-2 EXISTING RECREATION FACILITIES
CONDITION ASSESSMENT
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

This study would evaluate the condition of and public accessibility to existing recreation facilities, as specified in Section 4.0.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Under Title 18 Code of Federal Regulations Section 2.7, licensees whose projects include land and water resources with outdoor recreational potential have a responsibility to develop those resources in accordance with area needs. This includes the provision for adequate public access to such project facilities and waters and consideration of the needs of persons with disabilities in the design and construction of such facilities and access.

All recreation facilities in the upper Lee Vining Canyon are currently owned and operated by the Inyo National Forest (INF). However, many of these sites are either partially within or directly adjacent to the existing Federal Energy Regulatory Commission (FERC) Lee Vining Hydroelectric Project (Project) Boundary. INF has Federal Power Act Section 4(e) conditioning authority to prescribe conditions that may mitigate the impact of hydropower projects on INF system lands and thus could require mitigation for recreation induced by the presence of the Project. The initial phase (first study season) of the REC-1 study will evaluate which INF recreation facilities have a potential connection to the Project and thus would warrant inclusion in the broader studies proposed in the second study season.

3.0 STUDY GOALS AND OBJECTIVES

- Conduct a facility inventory and condition assessment at existing recreation facilities and associated parking areas, including an evaluation of signage and public safety features.
- Assess the carrying capacity and potential need for expansion, or alteration of existing recreation facilities.
- Assess the condition and potential for universal accessibility, where feasible.
- Identify existing dispersed or informal use areas, including documentation of existing conditions.
- Assess the consistency of current facilities with the Desired Conditions, Goals, Standards, and Guidelines described in the *Land Management Plan for the Inyo National Forest* (USFS, 2019).

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The existing recreation facilities condition assessment study area and specific study sites based on activity are listed in Table 4-1 and shown on Figure 4-1 below. As part of the REC-1 Recreation Use Assessment, the first field season (2022) will be utilized for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the Technical Working Group (TWG) to determine which sites may warrant broader studies (Recreation Use Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations. Table 4-1 below denotes which sites have already been agreed upon for facilities condition assessments in 2023 and which are to be determined based on the 2022 user surveys.

Table 4-1. Study Sites

Site ID	Site Name	Facilities Condition Assessment (2023)	Dispersed Use Assessment (2022) ^a
1	Saddlebag Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Saddlebag Lake DUA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Saddlebag Lake Trailhead	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Sawmill Walk-In Campground	TBD ^b	No
5	Carnegie Station Trailhead	TBD	No
6	Gardisky Lake Trailhead	TBD	No
7	Junction Campground	TBD	No
8	Bennettville Trailhead	TBD	No
9	Tioga Lake Overlook Info Site	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	Glacier Canyon Trailhead	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	Nunatak-Tioga Tarns Trailhead	TBD	No
12	Tioga Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	Nunatak Nature Trail	TBD	No
14	Ellery Lake Campground	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	Warren Fork Trailhead	TBD	No
16	Big Bend Campground	TBD	No

Site ID	Site Name	Facilities Condition Assessment (2023)	Dispersed Use Assessment (2022) ^a
17	Aspen Grove Campground	TBD	No
18	Boulder Day Use Area	TBD	No
19	Moraine Campground	TBD	No
20	Lower Lee Vining Campground	TBD	No
21	Cattleguard Campground	TBD	No

DUA = Day Use Area; TBD = to be determined

^a Dispersed use assessments will be generally conducted around each of the Project reservoirs (Saddlebag, Ellery, and Tioga). Specific developed INF recreation sites to be included are noted in this table.

^b To be determined following 2022 user surveys and Technical Working Group consultation.

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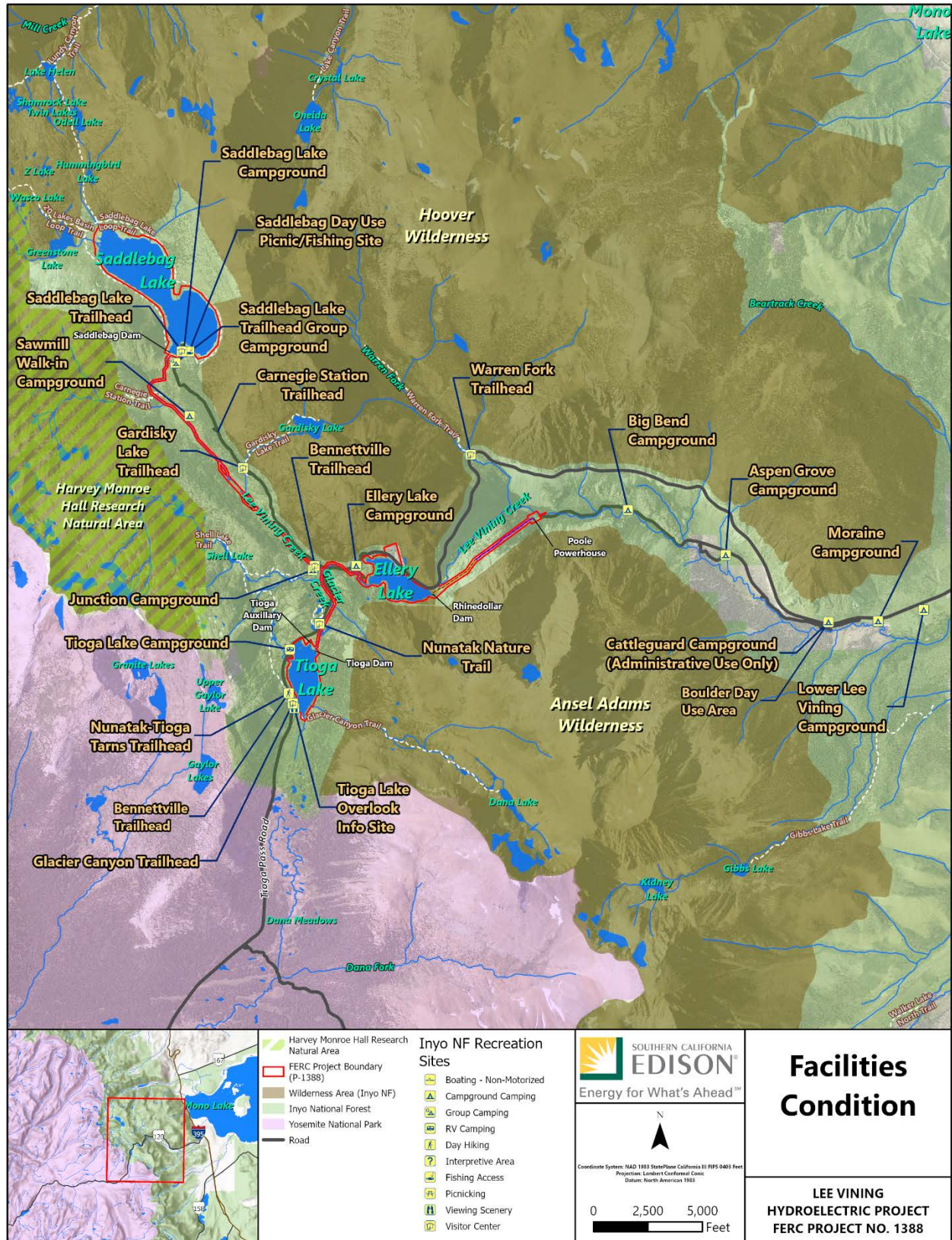


Figure 4-1. Survey and Data Collection Sites

5.0 EXISTING INFORMATION

- *2015 Licensed Hydropower Development Recreation Report*, FERC Form No. 80 (SCE, 2015)
- *2014 SCE Recreation Use Study Report for Eastern Hydro Division* (SCE, 2015)
- *2015 California Statewide Comprehensive Outdoor Recreation Plan* (SCORP) (CDPR, 2015)¹
- National Visitor Use Monitoring Reports for INF (USFS, 2006, 2011, 2018)²
- INF Special Use Permits and Concessionaire Data
- *Inyo National Forest Alternative Transportation System Study* (USDA, 2013)

The study will also analyze relevant management plans for the area, including the *Inyo County General Plan* (IC, 2001) and the *Land Management Plan for the Inyo National Forest* (USFS, 2019).

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¹ A 2020 California SCORP is currently under development and will supersede the 2015 California SCORP if available by the time of this analysis.

² 2021 National Visitor Use Monitoring data is currently being collected by the USFS and will also be analyzed once available.

6.0 STUDY APPROACH

6.1. DISPERSED USE ASSESSMENT (2022)

A dispersed use assessment will be conducted within and adjacent to the FERC Project Boundary at each of the Project reservoirs (Saddlebag, Ellery, and Tioga) and the developed sites indicated in Table 4-1 above. This study will consist of an initial desktop exercise to scan aerial imagery for evidence of dispersed use or informal access areas such as social trails, brown out areas, or impromptu parking around the perimeter of each study area. These observations will be digitized and attributed within a geographic information system (GIS) database to be used in a later field assessment to ground truth those potential dispersed uses and to further assess for signs of user-created roads, trails, and/or campsites. Dispersed use will be documented with photographs and integrated into a GIS database with relevant attributes (e.g., spatial location, number of fire rings, or length of roads or trails) to facilitate future analysis and ongoing assessment. Additional qualitative information will be collected, including potential issues or possible accommodations or future recreation opportunities at the sites. Findings will be used to inform potential locations for additional user interviews, spot counts, or traffic/trail counters in REC-1 activities to be performed during subsequent field seasons.

A report will be prepared documenting the findings of this study. The report will include the collected information, summarized in a narrative to include all observations and a visual representation of the observed dispersed use. The report will discuss findings in relation to the Desired Conditions, Goals, Standards, and Guidelines of the *Land Management Plan for the Inyo National Forest* (USFS, 2019), as applicable.

6.2. FACILITY CONDITION ASSESSMENT AND INVENTORY (2023)

A facility inventory and condition assessment will be performed on the recreation sites as indicated in Table 4-1 above. Southern California Edison (SCE) will work with the INF to develop appropriate methods and forms for the field assessment. Generally, the study will include an inventory and cursory condition assessment of the following within the study area:

- General assessment of the condition of facilities;
- Universal accessibility of facilities;
- Public safety measures;
- Signage and wayfinding; and
- Site-specific circulation roads, campsite spurs, and parking areas.

The survey will document any items in need of correction, repair, replacement, or similar action, noting facility condition according to Table 6-1. All inventories will be documented with photographs and integrated into a GIS database with relevant attributes to facilitate future analysis and ongoing assessments.

Table 6-1. Facility Condition Rating Table

ID	Category	Description
N	Needs replacement	Facility is non-functional or has broken or missing components
R	Needs repair	Facility has structural damage or is in an obvious state of disrepair
M	Needs maintenance	Facility needs maintenance, such as cleaning or painting
G	Good condition	Facility is functional and well maintained

A report will be prepared documenting the findings of this study. The report will include an inventory and assessment of the selected site facilities (see Table 4-1) and appurtenant features, including applicable maps and illustrations. The report will discuss findings in relation to the Desired Conditions, Goals, Standards, and Guidelines of the *Land Management Plan for the Inyo National Forest* (USFS, 2019), as applicable.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
2021	Continue consultation with TWG to finalize survey instruments and methods
2022–Spring/Summer	Conduct initial user surveys under REC-1 to determine primary reason for visit; Conduct dispersed use assessment
2022–Winter	Consult with TWG to determine study sites and methods for 2023 field season
2023–Spring/Summer	Conduct facility condition assessment
2024–February/March/April	Compile study results and prepare draft report
2024–May	Distribute draft report to TWG
2024–June/July	TWG review and comments
2024–August/September/October	Resolve comments and prepare final report
2024–November	Distribute final report in Final License Application

TWG = Technical Working Group

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed for final Study Plans to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, SCE hosted Recreation and Land Use Resources TWG Meetings on January 28, February 25,

April 1, and May 27, 2021, which resulted in study requests from Stakeholders to address questions regarding existing recreation facilities. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft Study Plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16(b)(5) following issuance of the Preliminary Application Document and Notice of Intent.

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Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	Bartshe Miller MLC	1/28/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> I'm interested in the pullouts at Ellery and Tioga Lakes. Are those in the Project area? Are there opportunities to organize/clarify traffic there, manage people, and include interpretive displays since the pullouts attract people to observe the scenery? What about adding restrooms?	Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.
2	Katie Goodwin Access Fund	2/25/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Regarding recreation use at Saddlebag Lake, I use that trail a lot. I noticed last year that there is a ferry across Saddlebag Lake that cuts out about two miles of easy walking. There are impacts from people offloading from the ferry on Saddlebag Lake and scattering across the tundra grass there. There is degradation of trails and vegetation there from picnicking and offloading. There is less camping, more backpacking, fishing, and picnicking happening. Wondering if it's worth looking at since there are a lot of people using the area.	A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes), including the use at the back end of Saddlebag Lake. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season. The REC-1 study will also characterize water taxi use at the lake using USFS concessionaire data.
3	Adam Barnett USFS	4/1/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> We are working on additional details for those three studies using your form. There are other things we'd like you to capture. Some of the use is outside of the currently defined Project boundary but has a strong nexus. We want to make sure those things aren't overlooked in analysis, such as Poole Powerhouse access road and access areas to recreation areas	SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions

Comment Number	Entity	Date/Forum	Comment	SCE Response
			along the road. Also include an assessment of use of Project area when people come up from the campgrounds farther downstream on Lee Vining Creek; we would like a better understanding of whether people using these downstream campgrounds are using the Project area for recreation. We are putting these questions/concerns into a format for the relicensing team to use.	with the TWG to determine which sites warrant broader studies (Recreation Use Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations.
4	Bartshe Miller MLC	4/1/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> Considering road pullouts, whoever is responsible for them, they do cross between both CalTrans and SCE. The pullouts affect the Project area, viewshed and recreation experience, bathrooms, etc. The recreation use study will probably cover it, but existing facilities clearly don't meet the needs of visitors (especially bathrooms). Point source pollution is still an issue. Dispersed camping and overnight parking are also being invited in these areas. The conditions/facilities of pullouts around the Project area are promoting incremental use. I'm thinking specifically of the Ellery and Saddlebag pullout locations.</p> <p>SCE isn't responsible for the increase in travelers, but SCE is the custodian for this part of the forest where their Project is located. The Project encourages visitors to stop along the way. People can't reasonably enjoy the area as they have in the past given the lacking existing facilities.</p> <p>People stop where there are pullouts, or any spaces off the road to park, those are invitations to recreate for dog walking, launching a kayak, taking photos, etc.</p>	Pullouts on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.
5	Monique Sanchez USFS	4/1/2021 TWG Meeting	<p><i>Paraphrase of comment in meeting:</i> It seems like we are assuming a lot, that people are there not for the Project or are using the pullouts as</p>	SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study

Comment Number	Entity	Date/Forum	Comment	SCE Response
			an invitation. There are a lot of unknowns. We need to think about how to ask these questions. Unless there is a study that defends it, we need to take a deeper look. We can also come up with a recreation plan where we come back together at look at these needs every so often.	requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (Recreation Use Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations.
6	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of: condition of gates on access roads, need for control of public vehicle access to Saddlebag lakebed ... need for paving of Saddlebag Rd, road drainage improvements, road pullout improvements ... vehicle intrusion near Ellery Lake, need for paving Ellery Lake parking lot ...	The Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used predominantly for Project purposes, such as for operation and maintenance of Project facilities or access to Project-related recreation opportunities. Vehicle intrusion at Ellery and Saddlebag Lakes will be generally assessed as part of the REC-2 dispersed use assessment, though there may be crossover during LAND-1 discussions regarding Project roads and road condition.
7	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of: ... need for paving Poole Powerhouse Rd to reduce sediment runoff to Lee Vining Creek ...	SCE acknowledges that this could be a concern. Paving this portion of the Poole Powerhouse Road could be a viable Protection, Mitigation, and Enhancement measure, which should be evaluated as part of the Study <i>AQ-3 Aquatic Habitat Mapping and Sediment Characterization</i> .
8	USFS	4/22/2021 Formal Study Request (Emailed Document)	The proposed project includes the Poole Power Plant Road which was likely built as part of the creation of the Lee Vining hydropower project. The new road provided additional access to Lee Vining creek and opened a new area of the Inyo NF to recreation development including Big Bend, Aspen, and Moraine campgrounds.	SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed INF recreation site mentioned in INF's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator's visit to determine which INF recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>The Lower Lee Vining and Cattleguard campgrounds may also have a nexus to the proposed project if this study finds that a significant portion of campground users stay here in order to recreate in the project vicinity, such as fishing at Tioga, Ellery, or Saddlebag Lakes.</p> <p>In addition, there is likely a nexus to recreation facilities on the Saddlebag Lake road which provides easy access to Saddlebag group camp, campground, trailheads, picnic area, boat ramp, Sawmill campground, and Gardisky Lake trailhead. Many of these facilities depend directly on the existing lake and the other facilities depend on the presence of the road.</p> <p>There is also a nexus to recreation facilities in the vicinity of Tioga and Ellery lakes including Ellery Lake Campground, Tioga Lake Campground, and Tioga Lake overlook/Glacier Canyon trailhead. These facilities were built after the proposed project and located in relationship to the project reservoirs in order to provide for their use by the public.</p> <p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake. NFS trails: Saddlebag Lk trail, Glacier Canyon trail User-created trails: trails around project lakes and along creeks</p>	<p>with the TWG to determine which sites warrant broader studies (Recreation Use Assessment, Facilities Condition Assessment) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p> <p>The Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used predominantly for Project purposes, such as for operation and maintenance of Project facilities or access to Project-related recreation opportunities.</p> <p>A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) but not along the creeks. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
9	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake.</p> <p>NFS trails: Saddlebag Lk trail, Glacier Canyon trail</p> <p>User-created trails: trails around project lakes and along creeks</p>	<p>SCE will include all developed USFS sites listed in this request as part of its Season 1 user surveys to determine the primary reason for user visits and whether there is a nexus to the Project itself.</p> <p>SCE will include an assessment of Saddlebag Lake Trail in Season 2 use and needs studies but does not propose including Glacier Canyon Trail in any detailed assessments. The trailhead facilities for Glacier Canyon Trail and any informal spurs leading around Tioga Lake will be studied as part of Season 2 activities, but no assessment of the trail or trail use itself is being proposed, as the draw is the wilderness and not Tioga Lake.</p> <p>SCE proposes to conduct a dispersed use assessment around Ellery, Saddlebag, and Tioga Lakes. This will include the dispersed camping and pullout areas previously identified in TWG discussions. This will not include an inventory of use along the creeks.</p>
10	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>Provide historic context for recreation facility development and hydropower facility development including an analysis of the timeline and location of recreation facilities in relationship to project reservoirs. For example, the construction of Big Bend, Aspen, and Moraine campgrounds after the construction of the Poole Power Plant road.</p>	<p>SCE does not understand how this context would inform discussions of Project nexus since the current baseline is the existing Project facilities. The REC-1 phased approach will assist in determining nexus through user survey implementation.</p>
11	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>Develop recreation facility operations, maintenance, and accessibility needs for the same sites identified in REC1 above.</p>	<p>Operations, maintenance, and accessibility needs will be discussed with the TWG following the field seasons and based on the collected data.</p>
12	USFS	4/22/2021 Formal Study	<p>Include assessment of: ... campground water systems condition and adequacy ...</p>	<p>For the developed INF recreation sites identified in the REC-1 initial surveys as having a Project nexus,</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
		Request (Emailed Document)		SCE will continue to consult with the TWG to develop methods and scope for facility condition assessments prior to the 2023 field season.
13	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of: ... sign inventory, need for interpretive signage ... fishing line disposal stations, litter disposal need ... opportunity for expansion of campgrounds.	REC-2 facilities condition assessments conducted during the 2023 field season will include a sign inventory and assessment of disposal stations at each site identified for inclusion in those studies. Information from those assessments will be used for discussions following fieldwork to determine whether there is a need for interpretive signage or expansion of campgrounds.
14	USFS	4/22/2021 Formal Study Request (Emailed Document)	Evaluate the relationship between flood damage to campgrounds in lower Lee Vining Canyon and project operations.	SCE's understanding is that the flooding below Poole Powerhouse typically occurs as a result of spring runoff, the magnitude of which is mitigated by the Project. SCE would welcome additional information that would tie campground flooding to Project operations. A hydrology and operations model is being proposed that will help develop information regarding Project operations below Poole Powerhouse.
15	Monique Sanchez USFS	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> What are the proposed study seasons, how will you determine if you'll do a second season for each Study? Since we had such an abnormal amount of use in 2020 because of COVID-19, I'd like to hear back from our recreation specialists, maybe the first season would have odd results. It could be a high or low use year in 2021/2022. Having both seasons of data would help us get a better understanding of what is going on.	No data will be collected in 2021; study seasons will begin in 2022. SCE understands that we are currently in a unique environment and that atypical recreation use and/or unexpected events that would affect the proposed studies are highly likely in the coming years. SCE will continue to coordinate with the TWG and rely on USFS staff for guidance on whether studies should be altered or re-scheduled as we move through the study season.
16	Bartshe Miller MLC	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Expressed concerns about a large number of vehicles driving and parking in Saddlebag Lake bottom when water levels are low. The access point observed is near the concessionaire water taxi. Where is this	Vehicle intrusion at Ellery and Saddlebag Lakes will be generally assessed as part of the REC-2 dispersed use assessment, though there may be crossover during LAND-1 discussions regarding Project roads and road condition. USFS

Comment Number	Entity	Date/Forum	Comment	SCE Response
			being addressed, is the concessionaire involved, and how does it affect SCE's operations?	concessionaire data, operations, and special use permits will also be reviewed and characterized as part of REC-1 and REC-2 studies. The nexus between water quality impacts from non-Project activities is discussed in Study <i>WQ-1 Stream and Reservoir Water Quality</i> .
17	Bartshe Miller MLC	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Mono County is pursuing a grant to improve the road and infrastructure up to Saddlebag Lake. This could be a problem if not done with inter-agency collaboration and SCE to help manage some of the issues we are studying here. The road is beyond repair, so they are considering paving it.	SCE will continue to monitor the proposed construction to determine whether improvements contemplated in TWG discussions or following field data collection may be incorporated into the effort. The proposed construction will also be monitored in case construction schedules conflict with proposed user surveys, as construction may result in temporary closure of certain INF sites to the public.

INF = Inyo National Forest; MLC = Mono Lake Committee; SCE = Southern California Edison; TWG = Technical Working Group; USFS = U.S. Forest Service

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10.0 REFERENCES

- BLM (Bureau of Land Management). 1993. *Bishop Resource Management Plan Record of Decision*. Bakersfield District, Bishop, CA.
- CDPR (California Department of Parks and Recreation). 2015. *2015 Statewide Comprehensive Outdoor Recreation Plan*. California Department of Parks and Recreation, Sacramento, CA.
- IC (Inyo County). 2001. *Inyo County General Plan*. Inyo County Planning Department, Bishop, CA.
- SCE (Southern California Edison). 2015. Form 80 and Recreation Report Filing: 2014 Recreation Use Study Report for Eastern Hydro Division.
- USDA (United States Department of Agriculture). 2013. *Inyo National Forest Alternative Transportation System Study*. United States Department of Agriculture.
- USFS (U.S. Forest Service). 2006. Visitor Use Report, Inyo NF, USDA Forest Service, Region 5, National Visitor Use Monitoring Data collected FY 2006. United States Department of Agriculture.
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- _____. 2019. *Land Management Plan for the Inyo National Forest. Fresno, Inyo, Madera, Mono and Tulare Counties, California; Esmeralda and Mineral Counties, Nevada*. R5-MB-323a. Pacific Southwest Region. September. Accessed: August 24, 2020. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd664404.pdf.

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LAND-1 PROJECT LANDS AND ROADS
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

This study would evaluate the necessity for potential modifications to the existing Lee Vining Hydroelectric Project (Project) Boundary, lands, and roads.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Under Title 18 Code of Federal Regulations (CFR) Section 4.41, the Federal Energy Regulatory Commission (FERC) requires that the FERC Project Boundary encompass all lands, roads, and trails necessary for project purposes, including the Operations and Maintenance (O&M) over the term of the license. FERC further requires (18 CFR §11.2) that a licensee recompense the United States for the use, occupancy, and enjoyment of its lands or its property. The annual charge for such use of government lands is calculated, in part, based on the amount of federal acreage within the project boundary, and therefore a distinction must be made between federal and non-federal lands when filing a project boundary and associated data. Therefore, this study will compile the necessary information regarding current Project facilities and O&M activities to inform an accurate representation of Project lands to be proposed in a Final License Application.

3.0 STUDY GOALS AND OBJECTIVES

- Identify whether additional Project lands may be needed for operation of the Project, including laydown and spoil areas, or whether current Project lands or facilities are no longer needed for Project operation.
- Confirm existing land ownership and federal lands within the existing FERC Project Boundary are accurately represented.
- Identify which roads or access trails are used for access to and maintenance of the Project, and identify existing agreements related to maintenance of those roads and access trails.
- Inventory and assess the condition of those identified Project-related roads and access trails, including the potential need for improvements.

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The proposed study area for the initial Project nexus assessment will include lands within the existing FERC Project Boundary, as well as additional lands identified by Southern California Edison (SCE) staff or through consultation with the Recreation and Land Use Technical Working Group (TWG) as having the potential for nexus to the Project (i.e., access, O&M activities). The study area for the inventory and assessment of conditions will include those roads and access trails identified as having a Project nexus.

5.0 EXISTING INFORMATION

The following existing information and data sources will guide the analysis:

- Approved FERC Project Boundary geographic information system (GIS) data
- Approved Project exhibit drawings
- Mono County tax parcel GIS data
- Federal land ownership GIS data
- Aerial imagery
- *Land Management Plan for the Inyo National Forest* (USFS, 2019).

6.0 STUDY APPROACH

- Assess the existing FERC Project Boundary for accuracy.
 - Analyze the existing FERC Project Boundary within GIS software to determine whether mapping errors or omissions are present in the representation of Project lands needed for operation under the current license.
- Assess existing Project lands ownership and lease agreements information.
 - Gather accurate land ownership and lease agreement data for existing Project lands to confirm ownership boundaries and representation of federal lands used for Project purposes.
- Consult with SCE O&M staff to determine whether the existing FERC Project Boundary adequately encompasses all lands needed for current operations or any proposed changes to facilities or operations.
- Consult with SCE and U.S. Forest Service (USFS) staff to identify roads or access trails that may be used for Project purposes, such as for O&M of Project facilities or access to Project-related recreation opportunities.
- Assess the condition of roads or access trails identified for Project purposes.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
2022 – Spring/Summer	Conduct desktop analysis and interview SCE staff
2022 – Winter	Prepare initial findings for consultation
2023	Consult with appropriate agencies and determine need for site assessments
2024 – Feb/March/April	Potential field season for site assessments
2024 – May	Compile study results and prepare draft report
2024 – June/July	Distribute draft report to TWG
2024 – Aug/Sept/Oct	TWG review and comments
2024 – November	Resolve comments and prepare final report
2022 – Spring/Summer	Distribute final report in Final License Application

SCE = Southern California Edison; TWG = Technical Working Group

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed for final study plans to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document (PAD) and Notice of Intent, SCE hosted Recreation and Land Use Resources TWG Meetings on January 28, February 25, April 1, and May 27, 2021, which resulted in study requests from Stakeholders to address questions regarding the FERC Project Boundary, lands, and roads. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft study plans or request studies as provided by the Traditional Licensing Process described under 18 CFR § 4.38(b)(5) following issuance of the PAD and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	Sheila Irons USFS	2/25/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Poole Powerhouse Road is a native (dirt) surface road and is only plowed because SCE needs to get access into the plant. Since the road is adjacent to Lee Vining Creek, there are issues with sedimentation.	SCE acknowledges that this could be a concern. Paving this portion of the Poole Powerhouse Road could be a viable PM&E measure, which should be evaluated as part of Study AQ-3 <i>Aquatic Habitat Mapping and Sediment Characterization</i> .
2	Bartshe Miller Mono Lake Committee	2/25/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> We are putting together our study requests still. Possibility of focused recreation use studies at Saddlebag, Ellery pull out, and at north end of Tioga Lake in regards to vehicle density on dirt areas. There is the possibility of non-point source pollution and run off (dumping of coolers, pet waste, etc.) at these pullouts increasing due to recreation/vehicle use at these pull outs. Pulling off in these areas is due to the scenic views at the reservoirs, so they seem related to the Project. Camping right at the shoreline of Saddlebag and Tioga Lakes is increasing, with no buffer between vehicles. This isn't happening at Ellery Lake because there is no direct driving access to the shoreline.	Pull-outs on State Route 120 alongside Ellery and Tioga Lakes are ultimately the responsibility of the California Department of Transportation. However, the formal pullout at Ellery Lake will be included in user surveys and spot counts conducted under REC-1 efforts in the 2023 field season. Informal pullouts surrounding the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) will be included in the 2022 dispersed use assessment. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season. SCE notes the related concern about potential water quality impacts. See comment response in Study WQ-1 <i>Stream and Reservoir Water Quality</i> .
3	USFS	4/22/2021 Formal Study Request (Emailed Document)	Determine project-dependent recreation facilities including access roads such as Poole Power Plant road and Saddlebag Lake road.	SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed Inyo National Forest recreation site mentioned in Inyo National Forest's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator visit to determine which Inyo National Forest recreation sites or areas may have a potential connection to the Project. The collected

Comment Number	Entity	Date/Forum	Comment	SCE Response
				<p>information will be used in discussions with the TWG to determine which sites warrant broader studies (<i>REC-1 Recreation Use Assessment, REC-2 Existing Recreation Facilities Condition Assessment</i>) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p> <p>Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used for Project purposes, such as for O&M of Project facilities or access to Project-related recreation opportunities.</p>
4	USFS	4/22/2021 Formal Study Request (Emailed Document)	Assess needs and location options for staging areas, materials storage sites, and use of borrow pits.	Study <i>LAND-1 Project Lands and Roads</i> will include consultation with SCE O&M and USFS staff to determine whether the existing FERC Project Boundary adequately encompasses all lands needed for current operations or any proposed changes to facilities or operations, including staging areas, material storage sites, and borrow pits.
5	USFS	4/22/2021 Formal Study Request (Emailed Document)	Revise project overview map to correct Hoover Wilderness boundary on E side of Ellery Lk, Label Tioga Campground on map.	The Project map that was hosted on SCE's relicensing website was an older version that has since been replaced with the USFS' updated wilderness boundaries since corrections were made. This is the data used in all current PAD documents and that will be used moving forward.
6	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of: condition of gates on access roads, need for control of public vehicle access to Saddlebag lakebed ... need for paving of Saddlebag Rd, road drainage improvements, road pullout improvements ... vehicle intrusion near Ellery Lake, need for paving Ellery Lake parking lot ... need for	Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used for Project purposes, such as for O&M of Project facilities or access to Project-related recreation opportunities. Vehicle intrusion at Ellery and Saddlebag Lakes will be generally assessed as

Comment Number	Entity	Date/Forum	Comment	SCE Response
			paving Poole Powerhouse Rd to reduce sediment runoff to Lee Vining Creek ...	part of the REC-2 dispersed use assessment, though there may be cross-over during LAND-1 discussions regarding Project roads and road condition.
7	USFS	4/22/2021 Formal Study Request (Emailed Document)	Include assessment of: ... need for paving Poole Powerhouse Rd to reduce sediment runoff to Lee Vining Creek ...	Paving this portion of the Poole Powerhouse Road could be a viable PM&E measure, which should be evaluated as part of Study AQ-3 <i>Aquatic Habitat Mapping and Sediment Characterization</i> .
8	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>The proposed project includes the Poole Power Plant Road which was likely built as part of the creation of the Lee Vining hydropower project. The new road provided additional access to Lee Vining creek and opened a new area of the Inyo NF to recreation development including Big Bend, Aspen, and Moraine campgrounds.</p> <p>The Lower Lee Vining and Cattleguard campgrounds may also have a nexus to the proposed project if this study finds that a significant portion of campground users stay here in order to recreate in the project vicinity, such as fishing at Tioga, Ellery, or Saddlebag Lakes.</p> <p>In addition, there is likely a nexus to recreation facilities on the Saddlebag Lake road which provides easy access to Saddlebag group camp, campground, trailheads, picnic area, boat ramp, Sawmill campground, and Gardisky Lake trailhead. Many of these facilities depend directly on the existing lake and the other facilities depend on the presence of the road.</p> <p>There is also a nexus to recreation facilities in the vicinity of Tioga and Ellery lakes including Ellery Lake Campground, Tioga Lake Campground, and</p>	<p>SCE proposes to utilize the first field season (2022) for on-site user surveys at each developed Inyo National Forest recreation site mentioned in Inyo National Forest's proposed study requests. These initial surveys are intended to collect the primary reason for each recreator visit to determine which Inyo National Forest recreation sites or areas may have a potential connection to the Project. The collected information will be used in discussions with the TWG to determine which sites warrant broader studies (<i>REC-1 Recreation Use Assessment, REC-2 Existing Recreation Facilities Condition Assessment</i>) in a second field season (2023) but would not imply that they are ultimately related to Project operations.</p> <p>Study <i>LAND-1 Project Lands and Roads</i> will include consultation with USFS staff to identify roads or access trails that may be used for Project purposes, such as for O&M of Project facilities or access to Project-related recreation opportunities.</p> <p>A dispersed use assessment will be conducted in 2022 around each of the Project reservoirs (Saddlebag, Ellery, and Tioga Lakes) but not</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
			<p>Tioga Lake overlook/Glacier Canyon trailhead. These facilities were built after the proposed project and located in relationship to the project reservoirs in order to provide for their use by the public.</p> <p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake. NFS trails: Saddlebag Lk trail, Glacier Canyon trail User-created trails: trails around project lakes and along creeks</p>	<p>along the creeks. Based on the information collected from that assessment, SCE will discuss with the TWG whether additional surveys, spot counts, or traffic/trail counters may be needed during REC-1 efforts in the 2023 field season.</p>
9	USFS	4/22/2021 Formal Study Request (Emailed Document)	<p>The study area should include all campgrounds, day use sites, trailheads, FS system trails, user-created trails, roads, and dispersed campsites adjacent to or in the vicinity of: Lee Vining Creek, Glacier Creek, Ellery Lake, Tioga Lake, or Saddlebag Lake.</p> <p>Rec sites: Include all developed recreation sites in Lee Vining Canyon, along Saddlebag Road, and around Saddlebag Lake. NFS trails: Saddlebag Lk trail, Glacier Canyon trail User-created trails: trails around project lakes and along creeks</p>	<p>SCE will include all developed USFS sites listed in this request as part of its Season 1 user surveys to determine the primary reason for user visits and whether there is a nexus to the Project itself.</p> <p>SCE will include an assessment of Saddlebag Lake Trail in Season 2 use and needs studies but does not propose including Glacier Canyon Trail in any detailed assessments. The trailhead facilities for Glacier Canyon Trail and any informal spurs leading around Tioga Lake will be studied as part of Season 2 activities, but no assessment of the trail or trail use itself is being proposed as the draw is the wilderness and not Tioga Lake.</p> <p>SCE proposes to conduct a dispersed use assessment around Ellery, Saddlebag, and Tioga Lakes. This will include the dispersed camping</p>

Comment Number	Entity	Date/Forum	Comment	SCE Response
				and pullout areas previously identified in TWG discussions. This will not include an inventory of use along the creeks.
10	USFS	4/22/2021 Formal Study Request (Emailed Document)	Provide historic context for recreation facility development and hydropower facility development including an analysis of the timeline and location of recreation facilities in relationship to project reservoirs. For example, the construction of Big Bend, Aspen, and Moraine campgrounds after the construction of the Poole Power Plant road.	SCE does not understand how this context would inform discussions of Project nexus because the current baseline is the existing Project facilities. The REC-1 phased approach will assist in determining nexus through user survey implementation.
11	Bartshe Miller Mono Lake Committee	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Expressed concerns about a large number of vehicles driving and parking in Saddlebag Lake bottom when water levels are low. The access point observed is near the concessionaire water taxi. Where is this being addressed, is the concessionaire involved, and how does it affect SCE's operations?	Vehicle intrusion at Ellery and Saddlebag Lakes will be generally assessed as part of the REC-2 dispersed use assessment, though there may be cross-over during LAND-1 discussions regarding Project roads and road condition. USFS Concessionaire data, operations, and special use permits will also be reviewed and characterized as part of REC-1 and REC-2 studies. The nexus between water quality impacts from non-Project activities is discussed in Study <i>WQ-1 Stream and Reservoir Water Quality</i> .
12	Bartshe Miller Mono Lake Committee	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Mono County is pursuing a grant to improve the road and infrastructure up to Saddlebag Lake. This could be a problem if not done with inter-agency collaboration and SCE to help manage some of the issues we are studying here. The road is beyond repair, so they are considering paving it.	SCE will continue to monitor the proposed construction to determine whether improvements contemplated in TWG discussions or following field data collection may be incorporated into the effort. The proposed construction will also be monitored in case construction schedules conflict with proposed user surveys, as construction may result in temporary closure of certain Inyo National Forest sites to the public.

PAD = Pre-Application Document; PM&E = Protection, Mitigation, and Enhancement; SCE = Southern California Edison; TWG = Technical Working Group; USFS = U.S. Forest Service

10.0 REFERENCES

USFS (U.S. Forest Service). 2019. *Land Management Plan for the Inyo National Forest. Fresno, Inyo, Madera, Mono and Tulare Counties, California; Esmeralda and Mineral Counties, Nevada.* R5-MB-323a. Pacific Southwest Region. September. Accessed: August 24, 2020. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd664404.pdf.

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LAND-2 VISUAL RESOURCE ASSESSMENT
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

This study will characterize the potential effects of Lee Vining Hydroelectric Project (Project) operations, maintenance, and construction activities on the existing visual quality of key viewing areas of Project lands.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

Operation, maintenance, and construction activities associated with the Project may affect scenic resources associated with Project lands. The Visual Resource Assessment will characterize existing visual resources within the existing FERC Project Boundary.

3.0 STUDY GOALS AND OBJECTIVES

The goal of this study is to characterize the existing visual resources of Project lands, document the associated visual quality and management objectives identified in the *Land Management Plan for the Inyo National Forest* (USFS, 2019), and document the existing visual character of Project facilities and features from affected viewsheds and representative Key Observation Points (KOPs).

4.0 EXTENT OF STUDY AREA AND STUDY SITES

The study area includes key viewsheds and representative KOPs from which the Project facilities and features are visible. Southern California Edison (SCE) will consult with the U.S. Forest Service (USFS) to identify viewsheds and representative views (KOPs) for assessment that may be influenced by future Project operations, maintenance, or construction activities. Potential KOPs include representative viewing locations along key access roadways, such as the State Route 120 National Forest Scenic Byway, and representative recreation and overlook areas that provide views of Project facilities and features such as Project reservoirs, dams, and facilities.

5.0 EXISTING INFORMATION

The *Land Management Plan for the Inyo National Forest* (USFS, 2019) identifies desired conditions for scenic character and scenic integrity objectives (desired conditions) for the management and preservation of scenic character within the Inyo National Forest. The designated scenic integrity objectives in the Project Vicinity are defined by the USFS as “High” (landscapes where the valued scenic character appears unaltered; deviations may be present but must repeat the form, line, color, texture, and pattern common to the scenic character so completely and at such scale that they are not evident) and “Very High” (landscapes where the valued scenic character “is” intact with only minute, if any, deviations; the existing scenic character and sense of place is expressed at the highest possible level). Additional information is needed to characterize the existing visual resources and potential effects of Project operations, maintenance, and construction activities.

6.0 STUDY APPROACH

The visual resource assessment will include the following components:

- Inventory, map, and describe existing Project infrastructure, operation, maintenance and construction activities that may have the potential to affect visual resources of the Project Area.
- Document existing Protection, Mitigation, and Enhancement measures, including the existing Visual Resource Protection Plan (Section 4(e) Condition 11) implemented under the existing license.
- Obtain (from the USFS), map (via geographic information system [GIS]), and characterize existing visual resource inventories and management objectives associated with the Project lands as developed under the *Land Management Plan for the Inyo National Forest* (USFS, 2019). Summarize any available information pertaining to variety classes, sensitivity levels, distance zones, and Recreation Opportunity Spectrum (ROS) classifications.
- Conduct a viewshed analysis (via GIS) and determine what portion and acreages of the Project lands and associated landscape are potentially visually affected by Project-related activities based on the inventory conducted under Task 1.
- In consultation with the USFS, identify KOPs from representative locations such as Project-related travel corridors and recreation sites within the identified viewshed areas for additional analysis. The number and location of KOPs will be determined in continued consultation with the Recreation and Land Use Technical Working Group (TWG) prior to the 2023 field season.
- Map and assess the KOP locations to include documentation of the existing scenic character and potential use of the selected KOPs. Where applicable, incorporate KOP locations into 2023 user surveys associated with the *REC-1 Recreation Use Assessment* to determine frequency and duration of visits at the KOP locations.
- Prepare a study report that documents the study findings and characterizes the existing visual conditions as they relate to Project facilities and Project-related activities.

7.0 SCHEDULE

Table 7-1. Schedule

Date	Activity
2022–Spring	Meet with TWG regarding existing available data; Conduct desktop analysis
2022–Summer/Fall	Conduct field surveys
2022–Winter	Consult with TWG on KOP locations and 2023 REC-1 field work
2023	Compile study results and prepare draft report
2024–May	Distribute draft report to TWG
2024–June/July	TWG review and comments
2024–Aug/Sept/Oct	Resolve comments and prepare final report
2024–November	Distribute final report in Final License Application

KOP = Key Observation Point; TWG = Technical Working Group

8.0 LEVEL OF EFFORT AND COST

A cost estimate (2021 dollars) will be developed to provide an understanding of the level of effort anticipated in the study.

9.0 CONSULTATION SUMMARY

In preparation to file the Preliminary Application Document and Notice of Intent, SCE hosted Recreation and Land Use Resources TWG Meetings on January 28, February 25, April 1, and May 27, 2021, which resulted in study requests from Stakeholders to address questions regarding visual quality. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the Stakeholders. Stakeholder comments on the outline, and relevant study requests received are summarized in the response to comments table below (Table 9-1).

Stakeholders will have additional opportunities to provide comments on draft study plans or request studies as provided by the Traditional Licensing Process described under Title 18 Code of Federal Regulations Section 16.8(b)(5) following issuance of the Preliminary Application Document and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	USFS	4/22/2021 Formal Study Request (Emailed Document)	<i>[Formal request for visual resource assessment]</i>	In response to USFS request, SCE is proposing a Visual Resource Assessment study as described in this Study Plan.
2	Adam Barnett USFS	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> The visual resources study request was targeted at SCE facilities, but visual quality observations would likely also capture some USFS facilities, to some extent. It would be good to be clear about who is responsible for what.	While USFS facilities would have no nexus to the Project in this scenario, SCE understands that there may be efficiencies during the process of conducting the visual resources assessment on SCE facilities to also include certain USFS facilities in the area. SCE will continue to consult with the USFS on detailed methods and delineation of responsibilities.
3	Monique Sanchez USFS	5/27/2021 TWG Meeting	<i>Paraphrase of comment in meeting:</i> Usually landscape architects work with the visual study team to figure out how the visual quality impacts visitors' experience. We have done this in other projects.	SCE understands that there is usually a cross-over between recreation use and visual assessment and an opportunity to efficiently combine efforts. Opportunities to obtain visual quality assessment data will be considered in the selection of REC-1 survey and data collection methods and locations for the 2023 field season.

SCE = Southern California Edison; TWG = Technical Working Group; USFS = U.S. Forest Service

10.0 REFERENCES

USFS (U.S. Forest Service). 2019. *Land Management Plan for the Inyo National Forest. Fresno, Inyo, Madera, Mono and Tulare Counties, California; Esmeralda and Mineral Counties, Nevada*. R5-MB-323a. Pacific Southwest Region. September. Accessed: August 24, 2020. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd664404.pdf.

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CUL-1 CULTURAL RESOURCE
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



August 2021

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1.0 POTENTIAL RESOURCE ISSUE

Southern California Edison (SCE), along with a Technical Working Group (TWG) of Stakeholders including the federal land-managing agency and Indian Tribes, identified the need to conduct cultural resource studies including archaeological, built environment, and Traditional Cultural Properties (TCPs), as well as Tribal and non-American Indian Traditional Cultural Resource (TCR)¹. This Study Plan details the study objectives, study area, methods, and schedule for the archaeological and built-environment resources, as well as non-American Indian TCPs and TCRs, resource studies. American Indian TCPs and TCRs will be considered within the *TRI-1 Tribal Resource Technical Study Plan*.

Several terms used throughout this Study Plan warrant definition at the outset.

- **Historic Property(ies)**, as defined in the Code of Federal Regulations, Title 36, Section 800.16(l)(1) (36 CFR §800.16(l)(1)), are prehistoric or historic archaeological sites, buildings, structures, objects, or districts included in or eligible for inclusion in the National Register of Historic Places (NRHP). Historic properties are identified through a process of evaluation against specific NRHP criteria in 36 CFR § 60.4.
- **A District** is a geographic area containing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan and physical development. Examples of districts include (but are not limited to) prehistoric archaeological site complexes, hydroelectric projects, residential areas, commercial zones, mining complexes, transportation networks, rural villages, canal systems, irrigation systems, or large ranches (NPS, 1997).
- **Cultural Resource(s)**, for the purpose of this document, is used to discuss any prehistoric or historic-period district, site, building, structure, object, landscape, TCP, or TCR, regardless of its National Register eligibility.

There may be any number of cultural resources in the Project Vicinity. Some of these resources may be eligible for the NRHP (i.e., historic properties).

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

The Federal Energy Regulatory Commission (FERC) decision to issue a new license is considered an “undertaking” pursuant to 36 CFR 800.16(y). The National Historic Preservation Act (NHPA) requires federal agencies to take into account the effect of undertakings on historic properties and allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment.

Continued Project Operation and Maintenance and other activities, including public recreation activities, may have an adverse effect on historic properties. The effect may be direct (e.g., result of ground-disturbing activities), indirect (e.g., public access to

¹ A TRC is a resource that may not meet the NRHP criteria but has significant value to a Tribal or non-American Indian community or group.

Project areas), or cumulative (e.g., caused by a Project activity or public access in combination with other past, present, and reasonably foreseeable future projects). This study focuses on these potential Project effects to historic properties.

For historic properties, appropriate study areas are defined by regulations under 36 CFR § 800 as the Area of Potential Effects (APE). The APE for the Project is further defined in Section 4.0, *Extent of Proposed Study Area and Study Sites*, of this Study Plan. The following will be assessed during the archaeological and built environment surveys:

- Are the impacts due to the presence of the Project? Impacts to NRHP-eligible resources or resources with associated Tribal values may include but are not limited to ground disturbance due to driving or excavation; erosion from higher flows; changes to a landscape viewshed; changes to a built environment feature.
- Are the impacts direct, indirect, and/or cumulative?
- If impacts are a result of the presence of the Project, how will they be addressed?

Data collected during this study will inform the following:

- Cultural Resource Technical Reports (CUL-1) for archaeological and built-environment resources.
- Cultural Resource Evaluation Reports for archaeological and built-environment resources.
- Historic Properties Management Plan (HPMP) for archaeological and built-environment resources as well as resources with associated Tribal values.

3.0 STUDY GOALS AND OBJECTIVES

The cultural resource study goals and objectives include the following:

- Meet FERC compliance requirements under in its regulations (18 CFR Part 5) and Section 106 of the NHPA, as amended, by determining if Project-related activities and public access will have an adverse effect on historic properties.
- Identify all archaeological resources, built-environment resources, and TCRs within the APE, determine which are historic properties, and develop the HPMP based on those results.
- Ensure that future Project facilities and operations are consistent with the Desired Conditions described in the *Land Management Plan for the Inyo National Forest* (USFS, 2019) for Social and Economic Sustainability and Multiple Uses.

4.0 EXTENT OF PROPOSED STUDY AREA AND STUDY SITES

The cultural resource studies will focus upon the FERC Project Boundary, the proposed APE, and a larger Study Area proposed to be a 0.5-mile radius around the proposed APE (Figure 4-1).

5.0 EXISTING INFORMATION

5.1. SUMMARY OF RECORD SEARCHES ARCHIVAL RESEARCH

The cultural resource section of the Preliminary Application Document (PAD) was developed using information obtained from the SCE archives, the Inyo National Forest, and the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) at the University of California Riverside.

A records search was conducted utilizing the ArcGIS Online (AGOL) database, which is maintained by SCE and includes a heritage search of all U.S. Forest Service (USFS) Heritage Programs in Region 5 within the SCE service territory as well as records searches from CHRIS.

The USFS Region 5 has developed and maintains corporate databases that include information about heritage resources and heritage resource investigations (Natural Resource Manager [NRM] Heritage Database) and geospatial data (GIS) in accordance with Section 112(2) of the NHPA and Forest Service Manual 2360. Region 5 Forests have shared with SCE all NRM and GIS data that intersect utility facilities (e.g., transmission and distribution facilities, roads) on all USFS lands. Detailed information is presented in Section 5.11.8, *Previously Identified Archaeological Sites*, and Section 5.11.9, *Lee Vining Hydroelectric Project*, of the PAD and is summarized here.

5.1.1. PREVIOUS CULTURAL RESOURCE STUDIES

Thirty-two previous cultural resource investigations were identified within the proposed Study Area (Table 5-1 below). Of these, 19 have been conducted within the proposed APE or overlap the proposed APE and Study Area. Among them are the preparation of a Historic and Archaeological Preservation Plan (HAPP [White, 1983]); four studies conducted during the last relicensing (Diamond and Hicks, 1988; White, 1985a, 1985b; and York, 1990); and the preparation of an HPMP (White, 1990). Maps of the previous studies are located in Appendix H (Confidential) of the PAD.

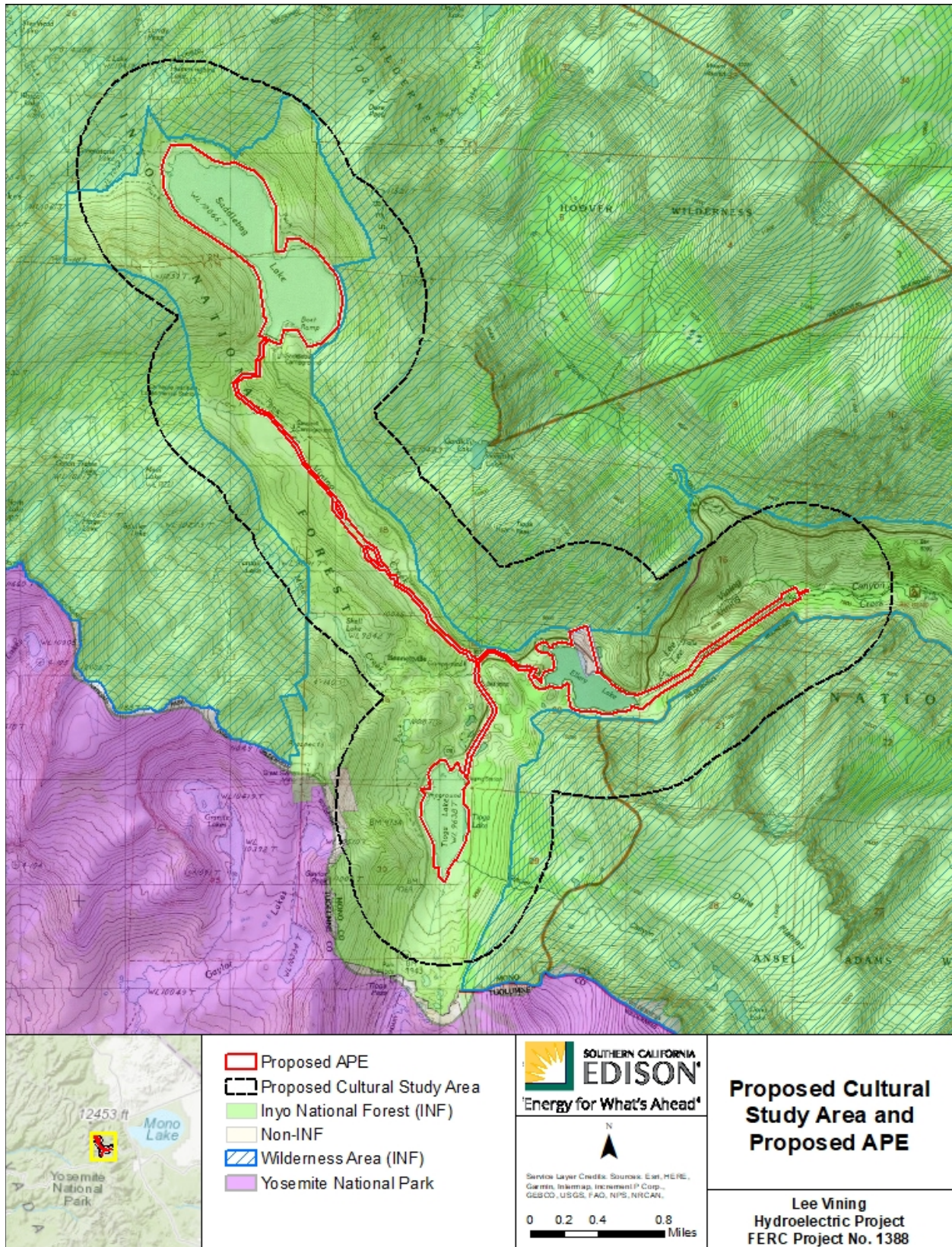


Figure 5-1. Proposed APE and Study Area.

Table 5-1. Previous Cultural Resource Studies Located Within the Proposed Study Area and APE

IC Number	SCE Document ID	USFS Number	Author(s)	Year	Report Title
MN-00153	--	--	Bodie, C.D.	1980	<i>Archaeological Reconnaissance Report- Saddlebag Lake Campground Reconstruction</i>
MN-00120	--	R1981050400201	Burton, J.	1980	<i>Archaeological Reconnaissance Report-Junction Campgrounds Rehabilitation</i>
MN-00107	--	--	Faust, N. A.	1980	<i>Archaeological Reconnaissance Report- Sawmill Campground Rehabilitation Project</i>
MN-00217	--	ARR #05-04-0270	Crist, M. K.	1982	<i>A Cultural Resources Reconnaissance of the Leggett Hydroelectric Project Mono County, California</i>
--	1160002	--	White, D.R.M	1983	<i>Historic and Archaeological Preservation Plan for Eastern Sierra Hydroelectric Projects in Mono and Inyo Counties, California: Lundy (FERC 1390), Lee Vining Creek (FERC 1388), Rush Creek (FERC 1389), and Bishop Creek (FERC 1394)</i>
MN-00802	1160170	R1987050400441	White, D.R.M	1985a	<i>Results of the 1984 Field Season, Cultural Resources Survey, for the Historic and Archaeological Preservation Plan for Eastern Sierra Hydroelectric Projects, In Mono and Inyo Counties, California: Lundy (FERC Project 1390), Lee Vining Creek (FERC Project 1388), Rush Creek (FERC Project 1389), and Bishop Creek (FERC Project 1394)</i>
--	1160187	--	White, D.R.M	1985b	<i>Results of the 1985 Field Season, Cultural Resources Survey, for the Historic and Archaeological Preservation Plan for Eastern Sierra Hydroelectric Projects, In Mono and Inyo Counties, California: Lee Vining Creek (FERC Project 1388) and Rush Creek (FERC Project 1389)</i>
MN-00424	1160218	--	Clay, V. L., and M.C. Hall	1988	<i>Results of The 1987 Field Season Cultural Resources Survey for The Historic and Archaeological Preservation Plan for The Lee Vining Creek Hydroelectric Project (FERC #1388) And The Rush Creek Hydroelectric Project (FERC #1389)</i>
MN-00417	1160198	--	Diamond and Hicks	1988	<i>Historic Overview of the Rush Creek and Lee Vining Creek Hydroelectric Projects</i>

IC Number	SCE Document ID	USFS Number	Author(s)	Year	Report Title
--	1160241	--	White	1988	<i>Guide to Areas Surveyed for the Historic and Archaeological Preservation Plan for Eastern Sierra Hydroelectric Projects in Mono and Inyo Counties, California: Lundy (FERC Project 1390), Lee Vining Creek (FERC Project 1388), Rush Creek (FERC Project 1389), and Bishop Creek (FERC Project 1394)</i>
--	1160283	--	Lehmann et al.	1989	<i>Summary Report for the Historical Investigation of Water Rights for Rush Creek and Lee Vining Creek</i>
MN-00418	1160279	--	Williams and Hicks	1989	<i>Evaluation of the Historic Resources of the Lee Vining Creek (FERC Project 1388) and Rush Creek (FERC Project 1389) Hydro Electric Systems, Mono County, California</i>
MN-00515	--	ARR #05-04-0467	Balint, T and W. Woolfenden	1990	<i>Archaeological Reconnaissance Report- Ellery Lake Pipe</i>
--	1160298	--	White, D.R.M	1990	<i>Management Plan for Historic and Archaeological Resources Associated with the Lee Vining Creek Hydroelectric Project (FERC Project No. 1388), Mono County, California</i>
--	1160288	--	York, A.	1990	<i>An Evaluation of Twenty-One Archaeological Sites on the Lee Vining Creek, Rush Creek, and Lundy Hydroelectric Projects, Mono and Inyo Counties, California</i>
--	1161328	--	Taylor, T.T.	1996	<i>Historic American Engineering Record Lee Vining Creek Hydroelectric System, Triple Cottage Building No. 102 HAER No. CA-180-A</i>
--	--	R1996050400707	Unknown	1996	<i>Lee Vining Canyon Bighorn Sheep Enhancement Project</i>
--	--	R1997050400720	Unknown	1997	<i>Tioga Pass Resort Evaluation</i>
--	1160470	--	Taylor, T.T.	1998	<i>Archaeological Survey and Assessment Report Eastside Hydro Gaging Station Automation Project Rush Creek and Lee Vining Creek Hydroelectric System Mono Basin, Mono County, California</i>
--	--	R2004050401073	Unknown	2004	<i>OHV Routes Inventory and Designation Survey</i>

IC Number	SCE Document ID	USFS Number	Author(s)	Year	Report Title
MN-00984	--	R2004050401073c	Penelope A. Spears	2006	<i>Heritage Resources Report (Off-Highway Vehicle (OHV) Route Designation Strategy)</i>
MN-00925	--	R2007050401250	West, Crystal	2007	<i>Heritage Resources Report (Saddlebag Lake Wedding)</i>
--	1164552	--	Parr, R.E.	2010	<i>Cultural Resources Assessment for the Southern Californian Edison Company Saddlebag Dam Geomembrane Liner Installation Project, Inyo National Forest, Mono County, California</i>
MN-01079	1163528	R2010050401456	Switalski, H and S. Hutmacher	2010	<i>Heritage Resource Inventory Report for the Southern California Edison Co.'s Replacement of Two Deteriorated Pole Structures on the Control-Morgan-Plant 2 55kV Transmission Line (4770-0355) and Two H-Frame Structures on the Lee Vining-Poole 115kV Transmission Line (4750-1597)</i>
MN-01053	--	R2009050401346	Leach-Palm, L., P. Brandy, J. King, P. Mikkelsen, L. Seil, L. Hartman, J. Bradeen, B. Larson, and J. Freeman	2010	<i>Cultural Resources Inventory of Caltrans District 9 Rural Conventional Highways in Inyo, Eastern Kern, Mono and Northern San Bernardino Counties, Summary of Methods and Findings</i>
MN-01054	1164522	R2010050401539	Parr, R.E.	2010	<i>Cultural Resource Assessment for The Southern California Edison Company Saddle Bag Dam Geomembrane Liner Installation Project, Inyo National Forest, Mono County, California</i>
MN-01107	1163657	R2010050401458	Hubert Switalski and Andrea Bardsley	2011	<i>Archaeological Survey Report and Historical Resource Evaluation for the Proposed Rhinedollar (overhead) 12kv Distribution Circuit Rebuild Project (6085-4800, 8-4816), Lee Vining Creek Hydroelectric System, Inyo National Forest, Mono County, California</i>
MN-01104	--	--	Willis W.	2011	<i>Tioga Road Survey</i>

IC Number	SCE Document ID	USFS Number	Author(s)	Year	Report Title
MN-01125	1163028	--	Hoffman and Dietler, J	2012	<i>Letter Report: Cultural Resources Letter Report for IO 322880, Cultural Resources Monitoring for Southern California Edison Emergency Repairs, Rhinedollar</i>
--	--	R2012050401734	--	2012	<i>Travel Management Road Closures, North Zone, CA</i>
--	1163000	R2014050401857	Switalski, H.	2014	<i>Heritage Resources Inventory Report for the Southern California Edison Company's Rebuild of an Underground Conduit Along State Route 120 (6485-4815, 8-4805), Ellery Lake, Inyo National Forest, Mono County, California.</i>
--	1164638	--	Nixon and Pacheco	2018	<i>Cultural Resource Inventory Report for TRR GO 131-D Evaluation Project Along the Lee Vining-Poole 115kV Transmission Line, Inyo National Forest, Mono County, California (USFS ARPA Permit# LVD18031)</i>

ARPA = Archaeological Resource Protection Act; FERC = Federal Energy Regulatory Commission; IC = Information Center; kV = kilovolt; NADB = National Archaeological Database; SCE = Southern California Edison; USFS = U.S. Forest Service

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5.2. PREVIOUSLY RECORDED CULTURAL RESOURCES

5.2.1. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

Archival research conducted to date indicates that there are seven pre-contact, zero multi-component (pre-contact and historic-period), and nine historic-period archaeological sites previously recorded within the proposed Study Area. Of these, two pre-contact and four historic-period archaeological sites are located within the proposed APE. The types of sites and their NRHP eligibility status are listed in Table 5-2. Pre-contact sites primarily include bedrock milling stations, lithic scatters, and ground stone. Historic-period sites include historic debris and the remains of buildings or structures. The archaeological remains at the Tioga Pass Resort (P-26-003308) may be related to Native American employees that worked there. Two of the archaeological sites within the proposed APE (CA-MNO-2437 and P-26-006236) have been evaluated for their eligibility for listing in the NRHP and were determined not eligible (Gualtieri, 1990). The locations of these sites are depicted on maps located in the Appendix H (Confidential) of the PAD.

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Table 5-2. Previously Recorded Archaeological Sites Located Within the Proposed Study Area and APE

Primary Number	Trinomial	USFS Number	Site Type	Composition of Site	NRHP Eligibility	In APE	In Study Area	Property Owner
P-26-000016	CA-MNO-16	05045101165	Prehistoric	Lithic Scatter	No Data	Yes*	No*	USFS
P-26-000203	CA-MNO-203	05045100342	Prehistoric	Lithic Scatter	No Data	No	Yes	USFS
P-26-000354	CA-MNO-354	05045201165	Prehistoric	Lithic Scatter	No Data	No	Yes	USFS
P-26-000537	CA-MNO-537	--	Prehistoric	Lithic Scatter	No Data	No	Yes	USFS
P-26-001679	CA-MNO-1679	05045100400	Historic	Bennettville Mine	No Data	No	Yes	USFS
P-26-001926	CA-MNO-1926	--	Prehistoric	Lithic Scatter	No Data	Yes	No	N/A
P-26-002417	CA-MNO-2417	05045100702	Prehistoric	Lithic Scatter	Not Eligible 09/22/88 FERC821004D	No	Yes	USFS
P-26-002437	CA-MNO-2437	05045101163	Historic	Structures; Historic Debris	Not Eligible 02/06/90 FERC821004D	Yes	Yes	SCE
P-26-003231	CA-MNO-3171	--	Historic	Historic Debris	No Data	No	Yes	USFS
P-26-003308	--	05045101259	Historic	Tioga Pass Resort	Historic District 07/29/1997, USFS970709A	Yes	Yes	USFS
--	--	05045101427	Historic	Historic Debris	No Data	Yes	No	USFS
--	--	05045101749	Historic	1880 Steam Engine	No Data	No	Yes	USFS
--	CA-MNO-5391	05045101750	Historic	Old Road Segment	No Data	No	Yes	USFS
--	CA-MNO-5392	05045101751	Historic	Historic Camp	No Data	No	Yes	USFS
P-26-005847	--	--	Historic	Historic Road	No Data	No	Yes	N/A
P-26-006236	--	05045101683	Historic	Rhinedollar 12kV Circuit	Not Eligible 06/06/2011, USFS110413A	Yes	No	USFS

APE = Area of Potential Effects; kV = kilovolt; N/A = data not available; NRHP = National Register of Historic Properties; SCE = Southern California Edison; USFS = U.S. Forest Service; *Site Record Very Old, Location is Uncertain

5.2.2. PREVIOUSLY RECORDED BUILT-ENVIRONMENT RESOURCES

The Project location offers geographical advantages for high-head hydroelectric generation due to the steep topography and annual snowpack. The Lee Vining Creek Hydroelectric System is composed of three dams and reservoirs, an auxiliary dam, a conduit, a powerhouse and related structures, and a substation and related structures. Built between 1917 and 1924, original plans called for a second powerhouse, which ceased to operate in 1940, and the construction of a third powerhouse that was never undertaken (Williams and Hicks, 1989). The Project was evaluated for the NRHP by James C. Williams and Robert A. Hicks in 1988. The only element of the system that was determined eligible was the triplex cottage, under Criterion C, located at Lee Vining Powerhouse No. 1 (i.e., Poole Powerhouse).

The period of significance for the cottage is between 1920 and 1930. It is a French Eclectic triplex designed by G. Stanley Wilson, an architect based in Riverside, California. “His work was of very high quality, and he was a leading practitioner of the Spanish-Colonial revival during the 1920s” (Williams and Hicks, 1989:26). The building is considered eligible for the NRHP under Criterion C, distinctive architectural characteristics that represent the work of a master.

The rest of the system was determined not eligible because the engineering techniques used in constructing the Lee Vining Hydroelectric Project and its components were commonplace for hydroelectric systems built during the 1920s. Good examples of commonplace components are the rock-filled dams at Saddlebag, Ellery, and Tioga Lakes (Williams and Hicks, 1989). Additionally, background research and fieldwork conducted when the Project was evaluated revealed that one of the related cottages had been removed, one was greatly altered, and other buildings had been removed or were substantially altered. Major additions had also been made in the form of switchcracks, transformers, fencing, and grading. Williams and Hicks also assessed that decommissioning of Powerhouse No. 3 had greatly compromised the Project's overall integrity (Williams and Hicks, 1989). Project elements that were recorded and evaluated are listed in Table 5-3.

Table 5-3. Lee Vining Hydroelectric Project Elements

Primary Number	HAER Number	Description	Date of Construction	NRHP Eligibility
--	--	Poole Powerhouse; Building No. 101	1924	Not Eligible
--	CA-180-A	Lee Vining Creek Hydroelectric System Triplex Cottage; Building No. 102	1924	Eligible
--	--	Woodshed; Building No. 103	1925	Not Eligible
--	--	Storage Shed; Building No. 104	1927	Not Eligible
--	--	Radio Room; Building No. 105	1925	Not Eligible
--	--	2-Car Garage; Building No. 107	1927	Not Eligible

Primary Number	HAER Number	Description	Date of Construction	NRHP Eligibility
--	--	Pumphouse; Building No. 109	1925	Not Eligible
--	--	Water Tank	1925	Not Eligible
--	--	Transformer Bank	Unknown ^a	Not Eligible
--	--	Switch Yard	Unknown ^a	Not Eligible
--	--	Flowline, Tunnel, Penstock	1920-1927	Not Eligible
--	--	Rhinedollar Dam (Ellery Lake)	1927	Not Eligible
--	--	Rhinedollar Flume	1952	Not Eligible
--	--	Flume House	1956	Not Eligible
--	--	Valve House	Unknown ^a	Not Eligible
--	--	Patrolman's Cabin/Vacation House	1942	Not Eligible
--	--	Tioga Dam	1928	Not Eligible
--	--	Auxiliary Dam (Tioga Lake)	1928	Not Eligible
--	--	Instrument Building (Tioga Lake)	ca. 1950s	Not Eligible
--	--	Saddlebag Dam	1920	Not Eligible
--	--	Fire House	1955	Not Eligible
--	--	Venturi Flume	1949	Not Eligible
--	--	Valve House	Unknown ^a	Not Eligible
--	--	Flow Line (Lee Vining Creek)	1950	Not Eligible
--	--	Instrument Building (Lee Vining Creek)	Unknown ^a	Not Eligible

Source: Williams and Hicks, 1989

HAER = Historic American Engineering Record; NRHP = National Register of Historic Places

Note:

^a Dates of construction were not in SCE's records (Williams and Hicks, 1989).

The only other built-environment resources known to be located within the proposed Study Area is the Rhinedollar Circuit (P-26-006236), the Tioga Pass Resort (P-26-003308), and segments of the old Tioga Road.

5.2.3. PREVIOUSLY RECORDED NON-AMERICAN INDIAN TRADITIONAL CULTURAL PROPERTIES

No non-American Indian traditional resources have been identified within the APE.

6.0 STUDY APPROACH

6.1. GENERAL CONCEPTS

- Personal safety is an important consideration of each fieldwork team. If SCE determines the information cannot be collected in a safe manner, SCE will notify

FERC and relicensing participants as soon as possible via email to discuss alternative approaches to perform the study.

- SCE shall obtain permission to access private property where needed well in advance of performance of the study. If access is not granted or if it is not feasible or safe, SCE will notify FERC and relicensing participants as soon as possible via email to discuss alternative approaches to perform the study.
- Field crews may make minor modifications to the study proposal in the field to accommodate actual field conditions and unforeseen problems. When modifications are made, the SCE field crew will follow the protocols in this Study Plan. If minor modifications are made, SCE will notify FERC and relicensing participants as soon as possible via email to discuss alternative approaches to perform the study.
- SCE shall treat all information regarding the locations of archaeological sites or other sensitive cultural resource information as confidential and will not disclose to the public, per the following regulations:
 - NHPA, United States Code, Title 54, Section 307103 (54 USC § 307103), which provides limited authority for withholding disclosure of information about the "location, character and ownership" of resources from the public;
 - Archaeological Resources Protect Act (ARPA), 16 USC § 470hh, which provides authority to limit information on the "nature and location" of archaeology on federal land;
 - Cultural and Heritage Cooperation Authority, 25 USC § 3056, which provides specific authority to the USFS to protect Tribal information from release under the Freedom of Information Act; and
 - California Government Code § 6254(r), which exempts from disclosure public records of Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.

6.2. STUDY METHODS

The methods proposed to meet the study goals and objectives are discussed in the following sections.

6.2.1. ARCHIVAL RESEARCH

As needed during implementation of the studies, archival research will be conducted at most of the repositories listed below to obtain additional information specific to the prehistory, ethnography, and history of the Project Area, the hydroelectric Project in whole, and its individual features. This may include contacting SCE employees, as appropriate, to gather feature-specific information. The results of the archival research will serve as the basis for preparing the prehistoric and historic contexts against which archaeological and built-environment resources may be evaluated. Historical

photographs located during the archival research will be inserted into and cited in the text. Previous NRHP evaluations of Project features will be used as much as possible (although, if previous studies are dated or lacking in necessary detail, additional, site-specific research may be required on an as-needed basis during the studies). Places to be contacted or visited include:

- Autry Museum of the American West, Los Angeles
- California State Archive, Sacramento
- California State Library, California History Room, Sacramento
- EIC, University of California Riverside
- Huntington Library, SCE Collection: Records, Documents, and Photos
- Native American Heritage Commission
- Paiute-Shoshone Cultural Center, Bishop
- Southern California Edison, Rosemead Office
- Tuolumne County Carlo M. De Ferrari Archive, Sonora
- USFS, Inyo National Forest
- University of California, Berkeley, Bancroft Library
- University of Nevada, Reno, Special Collections
- Yosemite National Park Research Library
- Yosemite National Park Archive, El Portal
- Other online repositories as applicable

6.2.2. ARCHAEOLOGICAL INVENTORY

Based on the existing data described above, FERC is required to make a reasonable and good-faith effort to identify historic properties that may be affected by the Project. As described in 36 CFR § 800.4(b)(1), this may be accomplished through sample field investigations and/or field surveys that are implemented in accordance with the Secretary of the Interior's Standards and Guidelines for Identification (NPS, 1983). FERC is required to consider any other applicable professional standards and Tribal, state, or local laws or procedures to complete the identification of historic properties.

To assist FERC in meeting its compliance obligations, and to develop appropriate management measures for historic properties identified within the APE, an archaeological inventory will be performed 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.

Areas within the APE that cannot be accessed in a safe manner (e.g., locations with dense vegetation or unsafe slopes) will not be included within the survey or recording of archaeological resources; these areas will be identified in the resulting survey report and an explanation for survey exclusion will be provided.

The field survey will be supervised by one or more qualified, professional archaeologists (i.e., individuals who meet the Secretary of the Interior's Professional Qualifications Standards for Archaeology [NPS, 2021]) who will participate in all field work. During the survey, archaeologists will walk parallel transects spaced at no more than 20-meters as vegetation and terrain allow. The purpose of the field survey is to: 1) examine lands which have not been previously surveyed; 2) examine lands previously surveyed but where the field strategy is unknown; and 3) examine lands previously surveyed but for which the field strategy does not meet current professional standards, as defined in the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (NPS, 1983) and the California Office of Historic Preservation (OHP). If conditions allow, lands typically inundated by Project reservoirs will be examined if they become accessible during the survey season.

Locations of previously recorded archaeological sites will be verified, 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. The archaeologists will determine if sketch maps for previously documented sites require revision to describe current site conditions more accurately. Newly discovered archaeological resources, including isolated finds, will be fully 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 cultural 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 Inyo National Forest 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 Inyo National Forest lands will require valid Organic Act permits. Any ground disturbing testing that occurs on Inyo National Forest lands will require valid ARPA permits. SCE or their consultants will obtain all required permits prior to beginning field work and will notify the Inyo National Forest 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.

6.2.2.1. Discovery and Treatment of Human Remains

FEDERALLY MANAGED LANDS

Should human skeletal materials, burials, and/or associated funerary objects be identified during the survey or other Project phases or prior to license issuance on USFS Inyo National Forest land, all work in the immediate area will cease and the location of the find will be secured at the moment of discovery. Personnel responsible for the discovery will notify the SCE Cultural Resources Specialist who in-turn will notify the appropriate federal land management agency's archaeologist and law enforcement officer. The remains will be treated in accordance with protocols of the appropriate land management agency.

If the human skeletal remains are Native American and are located on federal land, FERC and SCE's Cultural Resources Specialist shall coordinate with the USFS Inyo National Forest to comply with their Native American Graves Protection and Repatriation Act protocols pursuant to 25 USC 3001 et seq.

PRIVATE OR STATE LAND

Should human skeletal materials, burials, and/or associated funerary objects be identified during the survey or other phases of the Project or prior to license issuance, they will be treated in accordance with California Health and Safety Code (CHSC) Section 7050.5(b). At the moment of discovery, all work in the immediate area will cease and the location of the find will be secured. Personnel responsible for the discovery will notify the SCE Cultural Resources Specialist who in-turn, given that the skeletal materials are verified as human, will contact the Mono County Coroner and a qualified archaeologist will be secured to evaluate the find to determine, in consultation with the coroner, if the remains are or are not Native American. The skeletal remains will be treated following CHSC Section 7050.5.

6.2.3. BUILT ENVIRONMENT INVENTORY

Field inspection, documentation and subsequent NRHP evaluation of the entire Project Area (APE) will be undertaken by individuals meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History (NPS, 2021). The architectural historian will record or re-record (as appropriate, to meet current OHP and California Department of Parks and Recreation standards) each individual building or structure within the APE, including those that do not yet meet the age requirement for evaluation for the relicensing effort (which, in consultation with the USFS Inyo National Forest, is any building or structure that will attain 45 years of age by 2027). In addition to the hydroelectric-related resources, the architectural historian will be specifically looking for buildings, structures, and objects associated with mining, road construction, grazing, and recreation as well as any additional resources found during survey.

Fieldwork will include digital color photography of all resources and the production of sketch maps of individual features, which show the relationship of buildings and structures within each complex that may be associated with them (e.g., an operational hydroelectric facility or a campground within the APE). When possible, GPS points will be taken of each

resource that will then be plotted onto maps to create a comprehensive inventory of built-environment resources within the APE.

6.2.4. NON-AMERICAN INDIAN TRADITIONAL RESOURCES

As described above, FERC is required to make a reasonable and good-faith effort to identify historic properties that may be affected by the Project. As described in 36 CFR § 800.4(b)(1), this may be accomplished through sample field investigations and/or field surveys that are implemented in accordance with the Secretary of the Interior's Standards and Guidelines for Identification (NPS 1983). FERC is required to consider any other applicable professional standards and Tribal, state, or local laws or procedures to complete the identification of historic properties. To assist FERC in meeting its compliance obligations, and to develop appropriate management measures for historic properties identified within the APE, a non-American Indian traditional resources inventory will be performed to identify their presence.

The inventory will be coordinated among the archaeological, built environment, and Native American Traditional Resource studies. Supervision will be a joint effort by one or more qualified professionals who meet the Secretary of the Interior's Professional Qualifications Standards (NPS, 2021) and who will participate in research, public outreach, and field work.

If a potential resource is identified during research, public outreach, and/or field work, oral interviews and/or field verification will be conducted as appropriate. Resource locations will be verified and fully documented following NRHP Bulletin No. 38, *Guidelines for Evaluating and Documenting Identification of Traditional Cultural Properties* (Parker and King, 1990, 1998). The locations of all non-American Indian TCRs identified during the survey will be entered into a GPS receiver to document the location, which will be plotted onto the appropriate USGS 7.5-minute topographic quadrangle using the UTM coordinate system. GPS data collection will adhere to the Inyo National Forest specifications for accuracy and site-specific procedures where applicable.

6.2.5. NATIONAL REGISTER OF HISTORIC PLACES EVALUATION

SCE shall utilize the results of the inventories to prepare, in collaboration with the Inyo National Forest, Tribes, and other relicensing participants, an Evaluation Plan that will be executed to evaluate the eligibility of potential historic properties (in this case, archaeological sites, built-environment resources, and non-American Indian TCRs) for the NRHP. The Evaluation Plan will include an assessment of past, present, and reasonably foreseeable Project effects on potential historic properties and detail the methods of evaluation to be implemented. The Evaluation Plan will be provided to the Inyo National Forest, Tribes, and other relicensing participants as appropriate for review 30 days prior to submitting to the OHP.

NATIONAL REGISTER CRITERIA FOR EVALUATION

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- Are associated with events that have made a significant contribution to the broad pattern of American history; or
- Are associated with the lives of persons significant in America's past; or
- Embody the distinctive characteristics of a type, period, or method of construction; or
- Represent the work of a master; or
- Possess high artistic values; or
- Represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important to prehistory or history (NPS, 1997).

6.3. REPORTING AND HISTORIC PROPERTIES MANAGEMENT PLAN

The results of the Study Plan implementation will be reported in Exhibit E of the License Application, which will include a summary of the information and findings of the technical studies. Figures and other pertinent data supporting the summary in Exhibit E will be appended to the License Application. The archaeological records and other 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.

SCE anticipates FERC will enter into a programmatic agreement with the ACHP, OHP, and any other agencies or entities FERC elects to include. One of the programmatic agreement stipulations will be the completion and implementation of a HPMP to be included with the License Application.

The HPMP will consider direct and indirect effects of continued Project Operation and Maintenance on NRHP-listed or eligible archaeological and built-environment resources and will require avoidance and protection of specified resources, whenever possible. Processes and procedures will be developed for general and site-specific treatment measures, including minimization and mitigation measures to be taken should license implementation create unavoidable adverse effects to historic properties.

6.4. COORDINATION WITH OTHER STUDIES

To the extent feasible, SCE will coordinate archaeological and built-environment resources field studies with other Project-related environmental studies (e.g., Tribal

resources and habitat surveys) and conduct them in a manner that does not affect other sensitive natural resources. When conducting archaeological and built-environment or other investigations, Project sponsors and/or their contractors should not violate other federal or state laws or regulations protecting natural resources including but not limited to the Endangered Species Act and Clean Water Act. Project sponsors should consider that Tribes may utilize natural resources for subsistence or specific ceremonial uses and should avoid affecting those uses or events while conducting studies.

6.5. CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE

The proposed study methods discussed in this document are consistent with the study methods followed in several recent relicensing projects including the Bishop Creek Hydroelectric Project Relicensing, which is under way. These methods have been accepted by the participating Indian Tribes, agencies, and other interested parties associated with those projects. The methods presented in this Study Plan are consistent with ACHP guidelines for compliance with the requirements of Section 106 of the NHPA found in 36 CFR 800.

7.0 SCHEDULE

The anticipated Study Plan development and implementation schedule is identified in Table 7-1.

Table 7-1. Anticipated Schedule

Date	Activity
Summer 2022 – throughout the Project	Conduct background research online and at the appropriate repositories
Spring 2022 or earlier	Select study sites
Spring 2022	Meet with resource agencies and interested Stakeholders regarding cultural resource studies
Spring – Fall 2022	Conduct cultural resource surveys, including built-environment evaluations
Winter 2022/2023	Compile cultural resource survey results and prepare draft reports
TBD	Distribute draft report to stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
Spring – Fall 2023	Conduct archaeological site evaluations
Winter 2023/2024	Prepare archaeological site evaluation report
TBD	Distribute draft report to stakeholders
TBD	Stakeholder review and provide comments on draft report
TBD	Resolve comments and prepare final report
TBD	Prepare HPMP

Date	Activity
Summer 2022 – throughout the Project	Conduct background research online and at the appropriate repositories
TBD	Distribute draft HPMP to stakeholders
TBD	Stakeholder review and provide comments on draft HPMP
TBD	Resolve comments and prepare final HPMP
November 2024	Distribute final reports and HPMP in Final License Application

HPMP = Historic Properties Management Plan; TBD = to be determined

8.0 LEVEL OF EFFORT AND COST

A cost estimate will be developed to provide an understanding of the level of effort anticipated in the study. The anticipated cost for conducting the aforementioned studies is between \$80,000.00 and \$200,000.00 (2021) dollars. The range depends on several factors including the nature and number of cultural resources identified.

9.0 CONSULTATION SUMMARY

In preparation to file the PAD and Notice of Intent, SCE hosted Cultural and Tribal Resource TWG Meetings on January 27, February 24, March 31, and May 26, 2021, which resulted in study requests from stakeholders to address questions regarding cultural resources. Notes and materials from these meetings are available at www.sce.com/leevining. SCE has prepared this proposed study plan to address issues discussed with the TWG. A summary of comments and how they were addressed during the TWG meetings is presented in Table 9-1.

Stakeholders will have additional opportunities to provide comments on the study plans or request studies as provided by the Traditional Licensing Process described under 18 CFR § 16.8(b)(5) following issuance of the PAD and Notice of Intent.

Table 9-1. Consultation Summary—Response to Comments

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	Mono Lake Kutzadikaa Tribe	January 27, 2021/TWG	<p>Tribal people can provide and have interest in cultural resources, but are often limited in the cultural arena. Tribes are mostly interested in natural resources (e.g., plants, animals, water). In the past have been boxed into cultural issues and have been lumped into the general public for other natural resources. Public interest does often satisfy the Tribal interest, because often there is more. We do not want to repeat consultation efforts where Tribal has been boxed into other categories. Have there been previous studies / previous NEPA consultation done on this project? Was Tribal consultation done for previous NEPA? It seems that this will be the first opportunity for Tribes to consult on this project. I do not think they were previously engaged or involved in the project as it exists. Tribal input has not been taken into account yet. I agree that synthesis from other groups is important. We want to get this off on the right foot and we do not have time to attend all of those other meetings</p>	<p>This is exactly why FERC has two separate areas: cultural and Tribal. Analysis is needed to communicate your interests and concerns. You will have an opportunity all the way through the relicensing process to provide your comments and interests.</p> <p>Not much consultation happened on this Project the first time around in the late 1980s. SCE will gather the previous consultation letters to confirm if there was any consultation in the past.</p> <p>From a process standpoint, interconnectedness of all of the work groups (TWG) is important. We encourage participants to join more than one TWG if you have time. We need to make sure there is cross-referencing between the groups so we all know what is important to each other. As far as previous NEPA goes, we can put the previous EA on the Project website. A brief review of what information is currently provided on the website was presented. We will remember to check in with Cultural and Tribal TWG to inform about what the other TWGs are looking at.</p> <p>Several folks present here are in the other TWGs as well. You are welcome to join in several or all. We can report back to this group on progress of other TWGs. We do not have past relicensing documents up on our website, but we do have a lot of information that we have compiled so far</p>

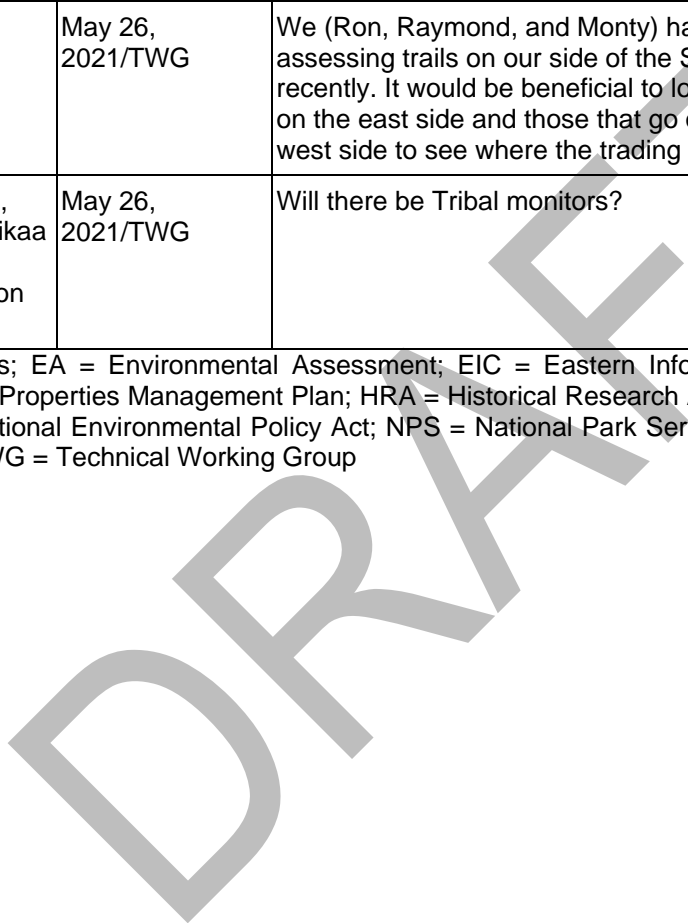
Comment Number	Entity	Date/Forum	Comment	SCE Response
				(PAD references, draft tables and figures, etc.).
2	All Tribal groups	February 24, 2021/TWG	Expressed concern about combining Lee Vining and Bishop Creek projects	SCE communicated that the two projects are entirely separate and in separate watersheds. Studies will not be combined.
3	Ron Goode, Tribal Chair, North Fork Mono Tribe	February 24, 2021/TWG	What is your actual FERC boundary buffer distance – 50 feet, 150 feet?	The buffer around Project features and creeks varies from 50 to 100 feet. The proposed APE is the FERC Project Boundary. If in the studies we find an effect happening outside of the FERC Project Boundary because of Project operations, the proposed APE boundary can be modified. The Study Area is a 0.5-mile radius for cultural. There was a survey 30 years ago during the last relicensing, but we are unsure about the thoroughness of the survey. The NHPA existed at the time of the last relicensing. We have only found reference to Tribal outreach from the previous relicensing, but no specific records. The APE will be resurveyed.
4	Ron Goode, North Fork Mono Tribe	February 24, 2021/TWG	What is the archaeological date on artifacts in this area? Wondering specifically about the arrowheads photo in the presentation.	There are lithic scatters recorded, but we do not know if there were diagnostic artifacts. The arrowheads photo is just a general picture not specific to this Project. We are still going through EIC data; if we find this information, we will let you know.
5	Tuolumne Band of Me-Wuk Indians/Tribal Chairwoman Reich	February 24, 2021/TWG	The Tribe, having participated in many hydroelectric relicensings are aware that the Tribal and Cultural resources portion of the Preliminary Application Document (PAD) has likely been prepared and they would like to see a copy before it goes out to the general	We should be able to do that as time allows. We will develop a timeline on how to do that.

Comment Number	Entity	Date/Forum	Comment	SCE Response
			public. Why hasn't this been shared since the Tribal document is supposed to discuss what the Tribes think? They would like to know what work has been done, and what is being discussed now.	
6	Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association	May 31, 2021/TWG	Concerned with public having information on cultural and gathering site locations. There has been a lot of desecration of gathering and other cultural sites. Concerned about the public receiving the PAD.	The publicly available PAD documents do not include maps of resource locations. Those are included in a confidential appendix of the PAD so the general public cannot access it. We also try and make the locations described in the PAD vague so they are hard(er) for the public to find. Please review the PAD ahead of time and give us feedback if a description is too specific. The locations of important plant species will hopefully be identified in the study, but the locations will not be described in detail in the PAD; they will be in confidential portions of the study report.
7	Raymond Andrews, Mono Lake Kutzadika Indian Community Cultural Preservation Association	March 31, 2021/TWG	I am wondering about archaeological surveys and permitting. Sometimes we do not make agreements with agencies for gathering sites; for example, we didn't want to do one with NPS because they wanted sensitive info that we didn't think they needed. I am not interested in gathering permits. We sometimes do not want to divulge the information to the agencies because of the way they use the data. Is there going to be a Tribal monitor on this project during construction? For example, if there was a flood then there would be construction to fix any damage, and you would use a Tribal monitor.	Since this Project is already built there would be no construction, so no Tribal monitor would be needed. If there is a requirement in the HPMP, then yes. For surveys, we would use Tribal participation.

Comment Number	Entity	Date/Forum	Comment	SCE Response
8	Bill Tucker, Southern Sierra Miwuk Nation	March 31, 2021/TWG	Have you checked into mine shafts area at top of Tioga Pass? There are several mine shafts that drain back into Lee Vining Creek that are 60-80 feet deep. There is ranger station right above it.	Mining operations and resulting water flow in the vicinity would typically be included in the PAD discussion.
9	Ron Goode, Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	Emphasized the difference between cultural resources the way the team is using it and cultural resources the way the Tribes use it. Cultural resources to the Tribes are all things—water, rocks, air, birds, plants, etc. He wants us to be clear on what we are meaning. Tribal resources are more than archaeological sites that might be eligible for listing in the National Register. Wanted clarity on how cultural resources and Tribal values will be analyzed separately. Is glad that the ethnographic study area extends 5 miles around the Project.	Cultural and Tribal resources are different; not all Tribal resources are eligible for the NRHP (e.g., an elderberry harvest location related to an individual gatherer might not be eligible). We are asking the Tribes to help us understand what is significant to them, and we will include those resources in our <i>TRI-1 Tribal Resource Technical Study Plan</i> implementation. We work closely with HRA who has a great understanding of what those more recent resources might be.
10	Ron Goode/Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	We do not want to get lost in the two verbiages (cultural and Tribal). For example, on another project we made them a vegetation species list and it was not included/assessed in the Botanical study report. We felt like we were not listened to.	The ethnobotanical lists you have developed in the 70s and the more recent one were included in the Tribal resources report for that project, and the biological team had access to that list. We will conduct a similar survey for this Project. We understand that the resources are connected and we will assess them where we need to. Sometimes archeological sites or buildings may not meet the criteria for the NRHP but still have Tribal values, and that is part of the goal here to recognize those resources. HRA, a Tribal representative, and Shelly Davis-King go into the field together and discuss potential ethnographic areas. We

Comment Number	Entity	Date/Forum	Comment	SCE Response
				identify as best as we can what those values are.
11	Ron Goode/Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	We (Ron, Raymond, and Monty) have been assessing trails on our side of the Sierra recently. It would be beneficial to look at trails on the east side and those that go over to the west side to see where the trading was.	SCE will conduct a trail analysis and has included some information and mapping in the PAD about work done for a previous study.
12	Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association	May 26, 2021/TWG	Will there be Tribal monitors?	Tribal monitors will be invited to the cultural resources field survey.

APE = Area of Potential Effects; EA = Environmental Assessment; EIC = Eastern Information Center; FERC = Federal Energy Regulatory Commission; HPMP = Historic Properties Management Plan; HRA = Historical Research Associates, Inc.; LADWP = Los Angeles Department of Water and Power; NEPA = National Environmental Policy Act; NPS = National Park Service; PAD = Preliminary Application Document; SCE = Southern California Edison; TWG = Technical Working Group



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TRI-1 TRIBAL RESOURCE
TECHNICAL STUDY PLAN

LEE VINING HYDROELECTRIC PROJECT
FERC PROJECT No. 1388



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1.0 POTENTIAL RESOURCE ISSUE

Southern California Edison (SCE), along with a Technical Working Group (TWG) of Stakeholders including the federal land-managing agency and Indian Tribes, identified the need to conduct Tribal Resource ethnographic and ethnohistoric research. Technical professionals of the relicensing team have further acknowledged that there has been no investigation to date of (1) the Lee Vining Hydroelectric Project (Project) Area American Indian ethnography, (2) the potential for American Indian Traditional Cultural Properties (TCPs), or (3) the potential for other American Indian resources, some of which may be eligible for listing in the National Register of Historic Places (NRHP). This Study Plan is presented to address the need to conduct the aforementioned baseline research. Potential resource areas include TCPs; Tribal economic ventures; resources of traditional, cultural, or religious importance; and environmental considerations of importance to the American Indian community.

Research has indicated there are no American Indian federal trust lands/allotments in the proposed Area of Potential Effects (APE). There are some Indian allotments in the region, but they are not proximate to the Project. The Tribe with the greatest affiliation to the project, the Mono Lake Indian Community (also known as the Mono Lake Kutzadikaa), has not yet been recognized by the federal government. The next closest Tribe with affiliation is the American Indian Council of Mariposa County (also known as the Southern Sierra Miwuk Nation); they also are not yet recognized by the federal government. The closest federally recognized Tribe to the Project is the Bridgeport Indian Colony, about 22 miles north. People with Kutzadikaa ancestry are also members of the Bishop Paiute Tribe (55 miles southeast), the Tuolumne Band of Me-Wuk Indians (about 52 miles due east), and perhaps others.

Each of these Tribes may have resources of value in the Project Area. There may be Tribal gathering, fishing, or hunting areas in the Project Vicinity, as the local American Indian community continues to access medicine plants, food plants, materials for tools, and many other items as part of their ongoing traditional cultural lifeways. The communities also have a connection with certain biological species, such as bighorn sheep, which may not be currently present in the area but nonetheless have value to heritage, stories, and traditional ecological knowledge (TEK). Some of these places may be TCPs or other properties eligible for inclusion in the NRHP based on associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions. Some of the resources may not be TCPs because they are not associated with the ongoing values by a community but may have other ethnographic or Tribal values and may also be eligible for NRHP listing. There is potential for both American Indian TCPs and other historic properties to be located in the Project. There are potentially other Tribal resources located in the region that have values other than those traditionally investigated in historic property surveys. The Federal Energy Regulatory Commission (FERC) recognizes these values. The National Historic Preservation Act (NHPA) implementing regulations in the Code of Federal Regulations, Title 36, Part 800 (36 CFR 800) confirm Section 101(d)(6)(B) of NHPA by stating that when properties of religious and cultural significance to Indian Tribes may be affected by an undertaking, consultation with the Tribes is

required, and that the Indian Tribe shall be a consulting party. To date, neither new research nor interviews have been conducted to identify or discuss such places of religious or cultural significance specific to this Project.

2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED

FERC's decision to issue a new license is considered a federal undertaking pursuant to 36 CFR 800.16(y). The NHPA requires federal agencies to take into account the effect of its undertakings on historic properties and allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment.

Continued Project Operations and Maintenance (O&M) and other activities, including public recreation activities, may have an adverse effect on Tribal resources, which may include historic properties. The effect may be direct (e.g., result of ground-disturbing activities), indirect (e.g., public access to Project areas), or cumulative (e.g., caused by a Project activity or public access in combination with other past, present, and reasonably foreseeable future projects). Tribal consultants have indicated they would like to have an understanding of previous effects, and this Tribal Resource study will focus on the identifying potential effects to Tribal resources.

FERC's requirements for involving American Indian Tribes outline the need to:

- Describe Indian Tribes, Tribal lands, and Tribal interests that may be affected by the Project.
- Include analysis of existing Project O&M that may impact Tribal cultural or economic interests.
- Identify impacts on Indian Tribes from existing Project O&M that may affect Tribal interests (e.g., Tribal fishing practices or agreements between the Indian Tribe and other entities) not necessarily associated with archaeological resources or other historic properties.

The Tribal Resource study proposes to identify:

- Tribal matters that exist because of the Project;
- Project effects that may be direct, indirect, and/or cumulative;
- Potential license conditions that may be necessary to address the Tribal matters;
- Existing agreements Tribes may have with other entities, such as the Inyo National Forest (U.S. Forest Service [USFS]) regarding access to Tribal resources, including but not limited to gathering (and gathering protocols), fishing, hunting, camping, ceremony, or other special uses; and
- Resource management goals of the USFS and take them into account when assessing effects.

Data collected during this study will inform the following:

- *Tribal Resource Technical Study Report (TRI-1).*
- *Tribal Resource Evaluation Report, as needed (may be included in the TRI-1 Tribal Resource Technical Study Report)*
- Technical assistance to the cultural resource team, as needed.
- Tribal resource content for the Historic Properties Management Plan (HPMP), with the goal of managing NRHP-eligible Tribal resources and other resources with identified Native values

3.0 STUDY GOALS AND OBJECTIVES

The principal goal of the Tribal Resource Study Plan implementation is to assist FERC in meeting compliance requirements identified in 18 CFR Part 5 along with those requirements subject to NHPA Section 106 (as amended), among other federal laws and regulations, by determining if licensing of the Project would have an adverse effect upon Tribal resources, which may also include historic properties. FERC desires to know to what extent the existing Project construction and operation may have affected Tribal, cultural, or economic interests; may in future affect Tribal cultural sites; and may have cross interests with other technical group studies. In addition to historic properties, which may be a type of Tribal resource, there are other Tribal resources that may be identified through archival research, oral interviews, field inspections, and government-to-government consultation. The study intends to ensure such places are described from a Tribal perspective and identify options for potential O&M effects.

Research conducted to date suggests that an ethnographic overview/background of the Project Area has never been conducted, and that for the previous license, there appears to have been no Tribal outreach. Additional goals of the Study Plan implementation are to ensure that Tribal values and resources are identified and acknowledged from a Tribal perspective, and that an adequate baseline ethnohistory is developed. Similarly, ensuring that the land-managing agencies and any other stakeholder agencies have their program needs met with respect to the proposed Project APE is a goal of the work. Finally, it is anticipated that management issues will be identified to be described and developed in subsequent planning efforts for the life of the license.

- Identify and document Tribal resources identified within or immediately adjacent to the proposed APE.
- Conduct a thorough American Indian ethnographic/ethnohistoric survey of the proposed APE and Study Area.
- Conduct outreach and contact with Tribal governments and their representatives.

4.0 STUDY AREA AND STUDY SITES

The Tribal Resource study will focus upon the FERC Project Boundary, currently coincident with the proposed APE, and a larger Study Area proposed to be a 5-mile radius from the APE (Figure 5-1).

The numbers of resources that may be investigated is not yet known, nor are their locations. Upon the post-pandemic reopening of archives and the ability to interview American Indians and Indian Tribes, more specific information will be provided.

5.0 EXISTING INFORMATION

Section 5.12, *Tribal Resources*, of the Preliminary Application Document (PAD) describes existing information, partially summarized in the bullets below.

- Native American Heritage Commission (NAHC) Sacred Lands File and Native American Consultation List (NAHC, 2020) identified six Tribal groups with affiliation to the Project Area.
- Six cultural affiliations/heritage associations have been identified by extracting data from mid-late 20th century ethnographic work in the vicinity and from statements by Tribal representatives.
- Available ethnographic literature includes Emma Lou Davis (1965), Fowler and Liljeblad (1986), Frederick Hulse (n.d.), Liljeblad and Fowler (1986), 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.
- Data on trails and other nearby resources conducted by Davis-King and Snyder (2010).
- Synthetic data on Mono County American Indians in Davis-King (2007, 2010).
- Named places in the Study Area have been identified to include villages, gathering locales, sacred areas, burial grounds, fishing locales, hunting grounds, and more.

These background data are applicable to a broader territory than the proposed Project APE, and there has not been an ethnographic investigation to date of Lee Vining Creek area American Indians. Previous ethnographies have focused on nearby Tribal groups.

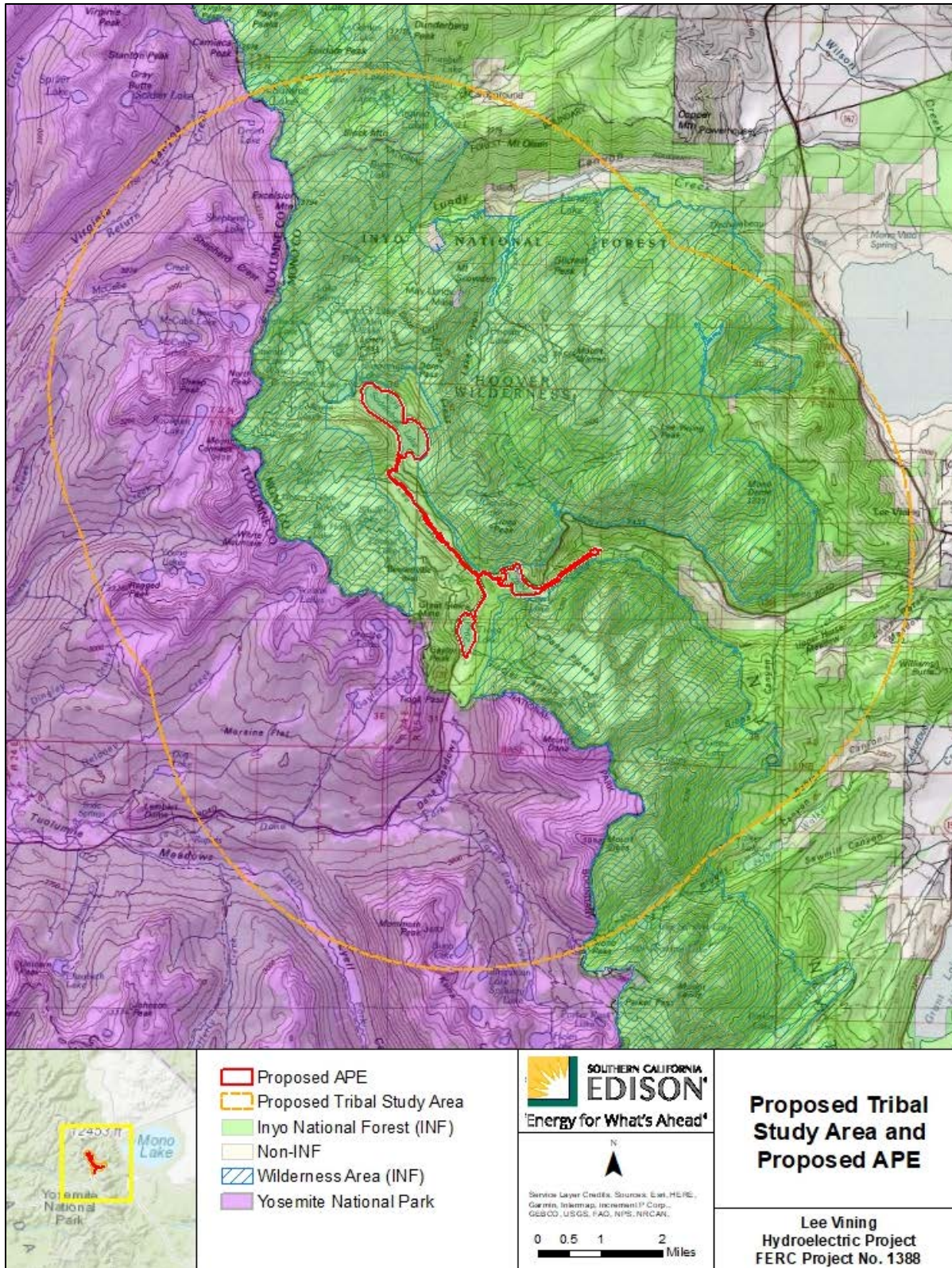


Figure 5-1. Proposed Tribal Resources APE and Study Area.

6.0 STUDY APPROACH

6.1. GENERAL CONCEPTS

- Personal safety is an important consideration of each fieldwork team. If SCE determines the information cannot be collected in a safe manner, SCE will notify FERC and relicensing participants via email to discuss alternative approaches to perform the study.
- SCE shall obtain permission to access private property where needed in advance of the study. If access is not granted or if it is not feasible or safe, SCE will notify FERC and relicensing participants via email to discuss alternative approaches to perform the study. SCE shall treat all information regarding the locations of archaeological sites or other sensitive cultural resource information as confidential, and will not disclose to the public, per the following regulations:
 - NHPA, United States Code, Title 54, Section 307103 (54 USC § 307103), which provides limited authority for withholding disclosure of information about the "location, character and ownership" of resources from the public;
 - Archaeological Resources Protect Act (ARPA), 16 USC § 470hh, which provides authority to limit information on the "nature and location" of archaeology on federal land;
 - Cultural and Heritage Cooperation Authority, 25 USC § 3056, which provides specific authority to the USFS to protect Tribal information from release under the Freedom of Information Act; and
 - California Government Code § 6254(r), which exempts from disclosure public records of Native American graves, cemeteries, and sacred places maintained by the NAHC.
- SCE shall treat all information regarding the specific locations of Tribal resources as confidential if the Tribes express this need.

6.2. STUDY METHODS

The methods proposed to meet study goals are listed below.

6.2.1. ARCHIVAL RESEARCH

As needed during the implementation of the studies, archival research will be conducted at most of the repositories listed below to obtain additional information specific to the prehistory, ethnography, and history of the Project Area. The results of the archival research will (1) provide primary data to create a background American Indian ethnohistory of the proposed Study Area; and (2) inform the Tribal resources historic context against which such resources may be evaluated for the NRHP.

The Tribal resources expert will conduct background archival research of the Study Area. This will involve visits to many repositories, which may include the following:

- Autry Museum of the American West, Los Angeles
- California State Archive, Sacramento
- California State Library, California History Room, Sacramento
- Emma Lou Davis Archive, Bishop
- Hulse and Essene (Bancroft Library, Berkeley and elsewhere)
- Huntington Library
- Inyo USFS, Bishop
- Merriam and Harrington notes (available online?)
- National Archive and Records Administration, San Bruno
- 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

Background research will be conducted as needed throughout the life of the Project.

6.2.2. ASSIST OTHER RESOURCE SPECIALISTS

Other resource areas may have a connection to Tribal resources. This includes various biological areas, water, trails, and recreation, among other areas. As needed, the Tribal resource expert will work to assist other resource experts. Assistance to the cultural resource team is anticipated to aid field identification and documentation of historic American Indian resources, potential gathering areas, and other places that may have value to Indian Tribes.

6.2.3. MEETINGS WITH TRIBAL GOVERNMENTS

Meetings with Tribal governments or administrators and/or attendance at Tribal Council meetings is proposed to provide Project data to Tribal groups, elicit areas of interest, identify appropriate Tribal informants, and establish protocols for conveying information.

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
- Mono Lake Indian Community (Mono Lake Kukzadikaa Tribe)
- North Fork Mono Tribe
- North Fork Rancheria of Mono Indians
- Tuolumne Band of Me-Wuk Indians
- Walker River Reservation
- Washoe Tribe of Nevada and California

Seven of these Tribes have participated in TWG meetings and are expected to participate further in this study. The other three Tribes may or may not participate. All Tribal groups will be contacted via telephone or email at a minimum to elicit their interest. At least five Tribal government meetings are anticipated.

6.2.4. INTERVIEWS

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

6.2.5. DOCUMENTATION AND EVALUATION

Three main categories of Tribal resources are anticipated. These are: (1) Tribal Places; (2) TCPs; and (3) Tribal Government Matters. Each is documented in a different manner. Tribal places may be potential historic properties, places 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 Study. TCPs will be documented on DPR 523 forms, and Tribal government resources may be documented in the TRI-1 Study or may be larger or different resource types (e.g., documentation of Indian allotments in the Study Area). All resources 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.

6.2.6. REPORTING AND HISTORIC PROPERTIES MANAGEMENT PLAN

The results of the Study Plan implementation will be reported in Exhibit E of the License Application, which will include a summary of the information and findings of the technical studies. Figures and other pertinent data supporting the summary in Exhibit E will be appended to the License Application. Tribal resource documentation and other sensitive information may be included in a confidential appendix withheld from public disclosure, in accordance with Section 304 (16 USC 4702-3) of the NHPA. 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, including, but not limited to, the location, description, and use of the Tribal cultural resources.

A detailed technical report will be prepared to include (1) regulatory, environmental, and cultural contextual statements; (2) a discussion of research methods; (3) a discussion of Tribal resources that are not also cultural resources; (4) a description and evaluation of resources that are assessed as potential historic properties; and (5) conclusions to include management considerations. Appendices are anticipated to include ethnobiological tables, chronological contact logs, specific historical reference materials, and more. The TRI-1 Study intends to identify all potential and actual Project effects, provide Tribal suggestions for mitigation or modification of impacts, and provide a structural basis for FERC to conduct their National Environmental Policy Act analysis for this technical resource area.

SCE anticipates FERC will enter into a programmatic agreement (PA) with the ACHP, California Office of Historic Preservation, and any other agencies or entities FERC elects to include. One of the PA stipulations will be the completion and implementation of a HPMP to be included with the license or License Application.

The HPMP will consider direct and indirect effects of continued Project O&M on NRHP-listed or Tribal resources and will require avoidance and protection of specified resources, whenever possible. Processes and procedures will be developed for general and resource-specific treatment measures, including mitigation measures to be taken should license implementation create unavoidable adverse effects to historic properties.

7.0 COORDINATION WITH OTHER STUDIES / WORK WITH OTHER TECHNICAL LEADS TO INTEGRATE TRIBAL CONSIDERATIONS

To the extent feasible, SCE will coordinate Tribal resource studies with other Project-related environmental studies (e.g., cultural resources and habitat surveys) and conduct them in a manner that does not affect other sensitive natural resources. When conducting Tribal resource investigations, Project sponsors and/or their contractors should not violate other federal or state laws or regulations protecting cultural or natural resources including but not limited to ARPA, the Endangered Species Act, and the Clean Water Act. Project sponsors should consider that Tribes may utilize natural resources for subsistence, medicine, tools, ceremonial uses, and other activities, and should avoid affecting those uses or events while conducting studies.

8.0 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE

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.

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*.

Potential TCP documentation, consultation, and any necessary fieldwork will be implemented in accordance with Section 106 of the NHPA, as amended, and shall take into consideration National Register Bulletin No. 38, *Guidelines for Evaluating and Documenting Identification of Traditional Cultural Properties* (Parker and King, 1990, 1998).

Tribal resources documentation will be implemented in accordance with FERC regulations and with Section 106 of the NHPA, as amended, if such resources are potential historic properties, and shall take into consideration National Register Bulletin No. 38 (Parker and King, 1998).

NRHP evaluations will be conducted in adherence with National Register Bulletin No. 15, *How to Apply the National Register Criteria for Evaluation* (NPS, 1995), and other NRHP Bulletins as appropriate.

9.0 RELATIONSHIP TO OTHER STUDIES

Tribal resources include animals, plants, the air, the sky, water, archaeological sites, gathering areas, hunting locales, places in stories, and many more categories. Thus, from a Tribal perspective, all of the relicensing studies are investigating some sort of Tribal

resource. This will be considered in the study analysis, with several specific aspects listed below.

- The location of culturally important plant species identified by American Indian Tribes will be incorporated into the TRI-1 Study, as appropriate, and shared with the botanical resources study team.
- Information about culturally important aquatic species, including fisheries, identified by American Indian Tribes will be incorporated into the TRI-1 Study, as appropriate, and shared with the proposed aquatic resources study team.
- Information about culturally important terrestrial animal species identified by American Indian Tribes will be incorporated into the TRI-1 Study, as appropriate, and shared with the proposed terrestrial resources study team.
- The locations of culturally important plant and/or animal species will 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 TRI-1 and CUL-1 Studies.

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10.0 SCHEDULE

Table 10-1. Schedule

Date	Activity
Spring 2022 or earlier	Work with Tribal groups to arrange meetings and establish protocols
Spring 2022	Meet with resource agencies/Stakeholders regarding Tribal resource studies
Spring 2022 ongoing	Conduct archival research online and at appropriate repositories
Summer–Fall 2022	Conduct Tribal site visits and assist with cultural resource surveys
Winter 2022/early 2023	Compile results of data gathered and prepare draft report
TBD	Distribute draft TRI-1 Study to Tribal representatives
TBD	Tribal review and comment on draft TRI-1 Study
TBD	Resolve comments and distribute draft TRI-1 Study to Stakeholders
Spring–Fall 2023	Continue identification and begin evaluation of Tribal resources
Winter 2023/2024	Prepare draft final TRI-1 Study
TBD	Distribute draft TRI-1 Study to Stakeholders
TBD	Stakeholder review and comment on draft final TRI-1 Study
TBD	Prepare draft Tribal resource HPMP
TBD	Review management plans for other study areas and comment
TBD	Stakeholder review and comment on draft HPMP
TBD	Resolve comments and prepare final HPMP
November 2024	Distribute final reports and HPMP in Final License Application

HPMP = Historic Properties Management Plan; TBD = to be determined

11.0 LEVEL OF EFFORT AND COST

A cost estimate will be developed to provide an understanding of the level of effort anticipated in the study. Anticipated cost for conducting the aforementioned studies is between \$65,000 and \$120,000 (2021) dollars. The range depends on several factors including the need to integrate Tribal studies with other technical studies, the nature and number of Tribal resources identified, the number of informant interviews, and the number of American Indian Tribes with which to meet.

12.0 CONSULTATION SUMMARY

In preparation to file the PAD and Notice of Intent, SCE hosted Cultural and Tribal Resources TWG Meetings on January 27, February 24, March 31, and May 26, 2021, which resulted in study requests from Stakeholders to address questions regarding Tribal resources. Notes and materials from these meetings are available at <http://www.sce.com/leevining>. SCE has prepared this outline for a proposed study to address issues discussed with the TWG and has reviewed the approach with the

Stakeholders. Stakeholder comments on the outline and relevant study requests received are summarized in the response to comments table below (Table 12-1).

Stakeholders will have additional opportunities to provide comments on draft study plans or request studies as provided by the Traditional Licensing Process described under 18 CFR § 16.8(b)(5) following issuance of the PAD and Notice of Intent.

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Table 12-1. Consultation Summary—Response to Comments ^a

Comment Number	Entity	Date/Forum	Comment	SCE Response
1	Dean Tonenna/ Mono Lake Kutzadikaa Tribe	January 27, 2021/TWG	Tribal people can provide and have interest in cultural resources, but these studies are often limited in the cultural arena. Tribes are mostly interested in natural resources (e.g., plants, animals, water). In the past issues have been boxed into cultural issues and have been lumped into the general public for other natural resources. Public interest does often satisfy the Tribal interest, because often there is more.	SCE intends to integrate the interests of the Tribes in other technical studies (e.g., botany, recreation, and wildlife). SCE welcomes Tribal participation in all the TWGs and studies.
2	Sean Scruggs/THPO Fort Independence Indian Community of Paiute Indians	February 24, 2021/TWG	Tribal input/information is needed, especially since there were not previous studies.	SCE intends to have a Tribal Resource Study, which will include ethnographic background information and interviews as well as documentation of any places in the area.
3	Ron Goode, Tribal Chair, North Fork Mono Tribe	February 24, 2021/TWG	Are there plant gathering areas for Tribes in this area? These are not typically included in a botanical study.	Acknowledged gathering locations would be included in the <i>TRI-1 Tribal Resource Technical Study Report</i> if shared by the gatherer, and that an ethnobotanical investigation will be included. SCE will also communicate these areas to the biological team to ensure there are no inadvertent impacts.
4	Tuolumne Band of Me- Wuk Indians/Tribal Chairwoman Reich	February 24, 2021/TWG	The Tribe is unaware of any ethnography that has been prepared for the immediate area and believes this should be in the Study Plan.	SCE assured the Tribe that an ethnohistory would be prepared and ethnographic interviews conducted.
5	Tuolumne Band of Me- Wuk Indians/Tribal Chairwoman Reich	February 24, 2021/TWG	The Tribe is aware of the Emma Lou Davis field notes, and requests that they be investigated and documented when the field work begins.	SCE will investigate the availability of these notes during Study Plan implementation.

Comment Number	Entity	Date/Forum	Comment	SCE Response
6	Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association	March 31, 2021/TWG	Concerned with public having information on cultural and gathering site locations. There has been a lot of desecration of gathering and other cultural sites.	Locational and other sensitive data related to Tribal and cultural resources will not be shared with the public. FERC has established procedures for ensuring confidentiality, which SCE will follow.
7	Bill Tucker, Southern Sierra Miwuk Nation	March 31, 2021/TWG	Have you looked at species like bighorn sheep and reptiles?	We have plans to discuss all biological entities of value to the Tribes. There are also terrestrial studies that will occur, and the Tribe is welcome to participate in those.
8	Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association	March 31, 2021/TWG	This project includes “the blood of mother earth”. There is a lot of water coming from surrounding area into this project. Our gathering is affected when water levels are low.	Effects to resources will be analyzed in the study implementation.
9	Raymond Andrews, Mono Lake Kutzadikaa Indian Community Cultural Preservation Association	March 31, 2021/TWG	Are you going to have individual consultation too?	SCE will conduct individual and Tribal group consultation as requested for study implementation.
10	Ron Goode/Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	A lot of discussion on terminology about cultural resources. Outsiders are generally looking at just the archaeological data. Big huge difference between Tribal values and cultural resources. Cultural resources for us are everything– plants, animals, rocks, water, etc. that are used, these are all cultural resources that go beyond just that other definition. The 5-mile buffer is excellent and has better clarity for our issues.	SCE noted they understand the difference between the cultural and Tribal studies and not all Tribal resources are appropriate for NRHP evaluation. We are asking the Tribes to help us understand what is significant.

Comment Number	Entity	Date/Forum	Comment	SCE Response
11	Ron Goode/Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	We (Ron, Raymond, and Monty) have been assessing trails on our side of the Sierra recently. It would be beneficial to look at trails on the east side and those that go over to the west side to see where the trading was.	SCE will conduct a trail analysis and has included some information and mapping in the PAD about work done for a previous study.
12	Ron Goode/Tribal Chair, North Fork Mono Tribe	May 26, 2021/TWG	Expressed concerns about shrimp [kutsavi] gathering areas and how hydro projects can affect them. You need to assess the whole stream and ecological connections between species to understand the system.	Kutsavi are acknowledged and recognized as a cultural resource to the Tribes and will be discussed in the Tribal Resource Study.

FERC = Federal Energy Regulatory Commission; HPMP = Historic Properties Management Plan; LADWP = Los Angeles Department of Water and Power; PAD = Preliminary Application Document; SCE = Southern California Edison; TWG = Technical Working Group

^a Comments addressed here are directly related to development of methods and approach to studies; please see Appendix B, Consultation Record, for expanded treatment of Tribal interests and perspectives.

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13.0 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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- Davis-King, Shelly, and James B. Snyder. 2010 *The Silver Thread: Upper Tuolumne River American Indian Land Use in Yosemite National Park: Ethnographic Context for the Tuolumne Wild and Scenic River Comprehensive Management Plan and Environmental Impact Statement, Tuolumne County, California*. Submitted to USDI, National Park Service, Yosemite National Park, California.
- Fowler, Catherine S., Compiler and Editor. 1989. *Willard Z. Park's Ethnographic Notes on the Northern Paiute of Western Nevada, 1933-1944*. Volume I. University of Utah Anthropological Papers 114. Salt Lake City.
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- Hulse, Frederick S. n.d. [1930s] Lee Vining Paiute Ethnographic Notes. CU-23.1, 149. Manuscript on file, Bancroft Library, University of California, Berkeley. Liljeblad, Sven, and Catherine S. Fowler. 1986. Owens Valley Paiute. In *Handbook of North American Indians, Volume 11: Great Basin*, edited by Warren L. d'Azevedo, pp. 412-434. Smithsonian Institution, Washington, D.C.
- NAHC (Native American Heritage Commission). 2020. Letter dated July 27, 2020 Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Lee Vining Hydroelectric Project, Mono County.

NPS (National Park Service). 1995. *How to Apply the National Register Criteria for Evaluation*, National Register Bulletin No. 15. U. S. Department of the Interior, National Park Service, Washington, D.C.

Parker, Patricia L., and Thomas F. King. 1990. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*, National Register Bulletin 38, U. S. Department of the Interior, National Park Service, Washington, D.C.

_____. 1998. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*, National Register Bulletin 38. U. S. Department of the Interior, National Park Service, Washington, D.C.

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**APPENDIX D
SINGLE-LINE DIAGRAM (CEII)**

Critical Energy Infrastructure Information 18 CFR 388.113—DO NOT RELEASE

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APPENDIX E
FERC LICENSE CONDITIONS SUMMARY TABLE

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Table E-1. FERC License Conditions Summary

License Article	Summary of Requirement	Subsequent FERC Actions		Status	Current Compliance Actions
		Date	Summary		
201	Annual Charges	12/20/2001	Order amending license in part, approving revised exhibits, and revising annual charges.	Ongoing	Annually reimburses FERC for administrative costs and recompensing for use and occupancy of federal lands.
202	Amortization Reserve Account			Ongoing	Set aside one-half of the remaining surplus earnings, if any, cumulative computed, in the Project amortization reserve account.
203	File Project Drawings			Completed	
401	File plan to bury the telephone line	5/19/1997	Order removed this requirement.	Deleted	
402	File revegetation plan			Completed	
403	Flows may be temporarily modified in emergencies			Ongoing	
404	Comply with Condition 4 in Appendix A			Ongoing	
405	Limit water level fluctuations below Project facilities	5/19/1997	Order changed the limitation to specifically below Saddlebag Dam.	Ongoing	Provide flow releases as outlined in condition.
406	Pay fee to CDFG			Ongoing	Annually reimburse CDFW for some fish stocking costs.
407	File erosion and sediment control plan	5/19/1997	Order removed reference to the telephone line in this Article.	Ongoing	Follow erosion and sediment control plan.
408	Consult with SHPO and file cultural resource plans			Ongoing	Follow cultural resources plans.
409	File plan to protect sensitive plants			Ongoing	Follow sensitive plants protection plan.

License Article	Summary of Requirement	Subsequent FERC Actions		Status	Current Compliance Actions
		Date	Summary		
410	Licensee can grant land use permissions to other parties if appropriate			Ongoing	
501	Headwater benefits			Not applicable to this Project	
Cond. 1	USFS must approve project design			Completed	
Cond. 2	USFS must approve changes to project design			Ongoing	If Project design changes are proposed, USFS must approve the changes.
Cond. 3	Consult with USFS to protect natural resources			Ongoing	Annual USFS consultation occurs 60 days before the anniversary of the license.
Cond. 4	Minimum Streamflow Requirements out of each Project lake/dam	2/29/2000	Order revised to allow regulated flow releases for springtime cutting and minimize downstream flooding.	Ongoing	Provide flow releases as outlined in condition.
		1/13/2020	One project gage was moved from below Poole Powerhouse to below Ellery Dam.		
Cond. 5	Install stream gages and lake level measuring devices, get USFS approval, file streamflow reports	2/29/2000; 6/28/2001; 1/13/2020	One project gage was moved from below Poole Powerhouse to below Ellery Dam. Tioga and Saddlebag stream gages can be shut off in winter under specific conditions. Lake level measuring devices can be shut off under specific conditions. Annual streamflow report is due April 1.	Ongoing	Maintain gages and lake level measuring devices. File annual streamflow reports.

License Article	Summary of Requirement	Subsequent FERC Actions		Status	Current Compliance Actions
		Date	Summary		
			In wet and normal years, water management plans will be coordinated with LADWP.		
Cond. 6	Ellery Lake must be kept at full level during recreation season, develop annual summer O&M plan with USFS and CDFG			Ongoing	Maintain Ellery Lake level per condition.
Cond. 7	Vegetation and aquatic monitoring will continue for duration of the license; File a fish and wildlife habitat mitigation plan			Ongoing	Monitor vegetation, riparian, and aquatic systems. Follow fish and wildlife habitat mitigation plan.
Cond. 8	File oil and hazardous substances storage and spill prevention and cleanup plan			Ongoing	Follow oil and hazardous substances storage and spill prevention and cleanup plan.
Cond. 9	File an erosion and sediment control plan			Ongoing	Follow erosion and sediment control plan.
Cond. 10	File a spoil storage/disposal plan			Ongoing	Follow spoil storage/disposal plan.
Cond. 11	File a visual resources protection plan			Ongoing	Follow visual resources protection plan.
Cond. 12	File RTE species protection and mitigation plan			Ongoing	Follow RTE species protection plan.
Cond. 13	Implement the provisions of the Cultural Resources Plan	8/26/2011	FERC stated that no further action under this requirement is necessary.	Completed	
Cond. 14	Obtain a USFS Special Use Authorization	2/29/2000	Order removed this condition.	Deleted	

CDFG = California Department of Fish and Game (have since changed their name to California Department of Fish and Wildlife [CDFW]); FERC: Federal Energy Regulatory Commission; LADWP = Los Angeles Department of Water and Power; O&M = Operations and Maintenance; RTE = Rare, Threatened, and Endangered; SHPO = State Historic Preservation Office; USFS = U.S. Forest Service

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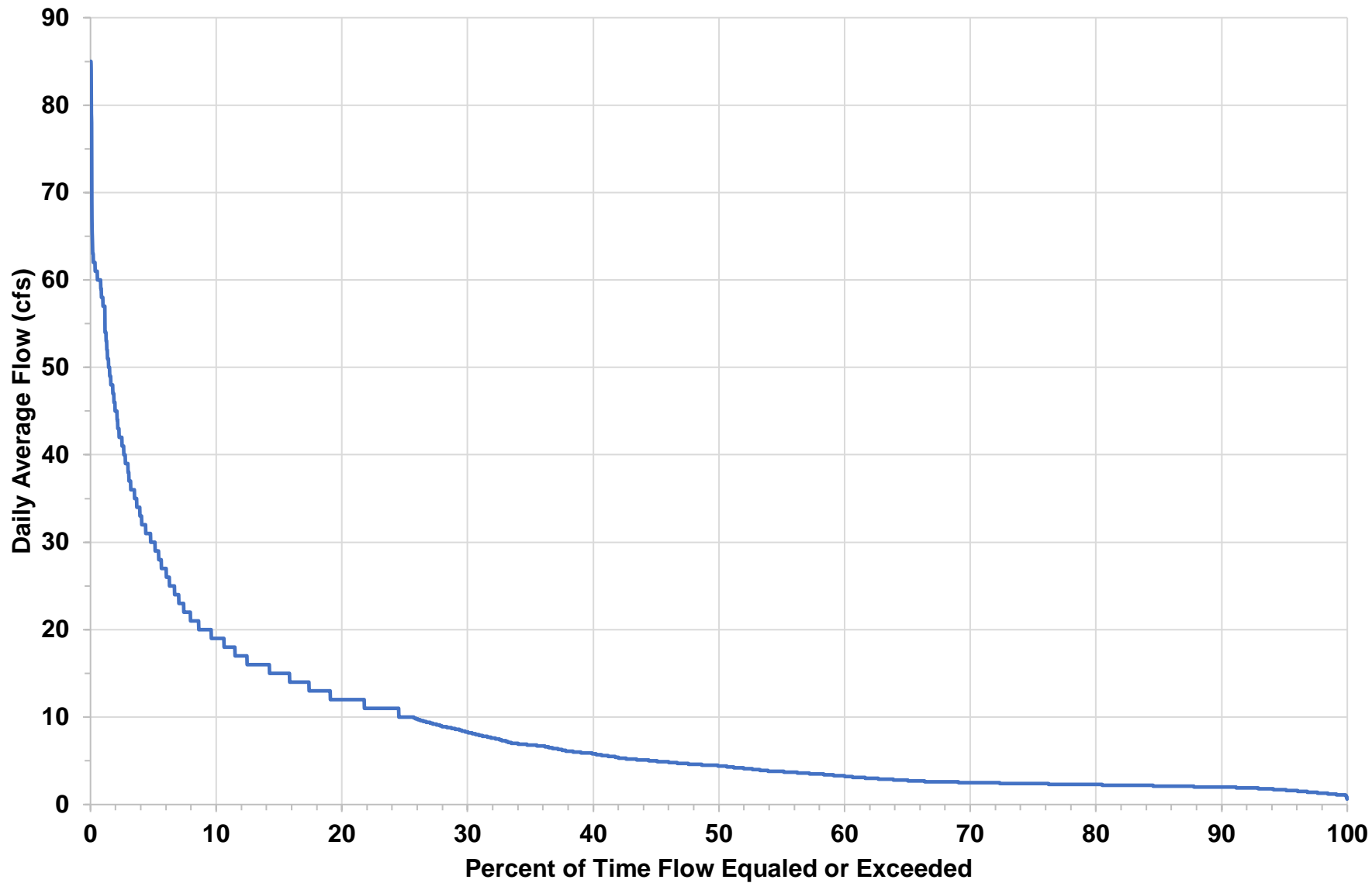
**APPENDIX F
FLOW DURATION CURVES**

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Annual Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

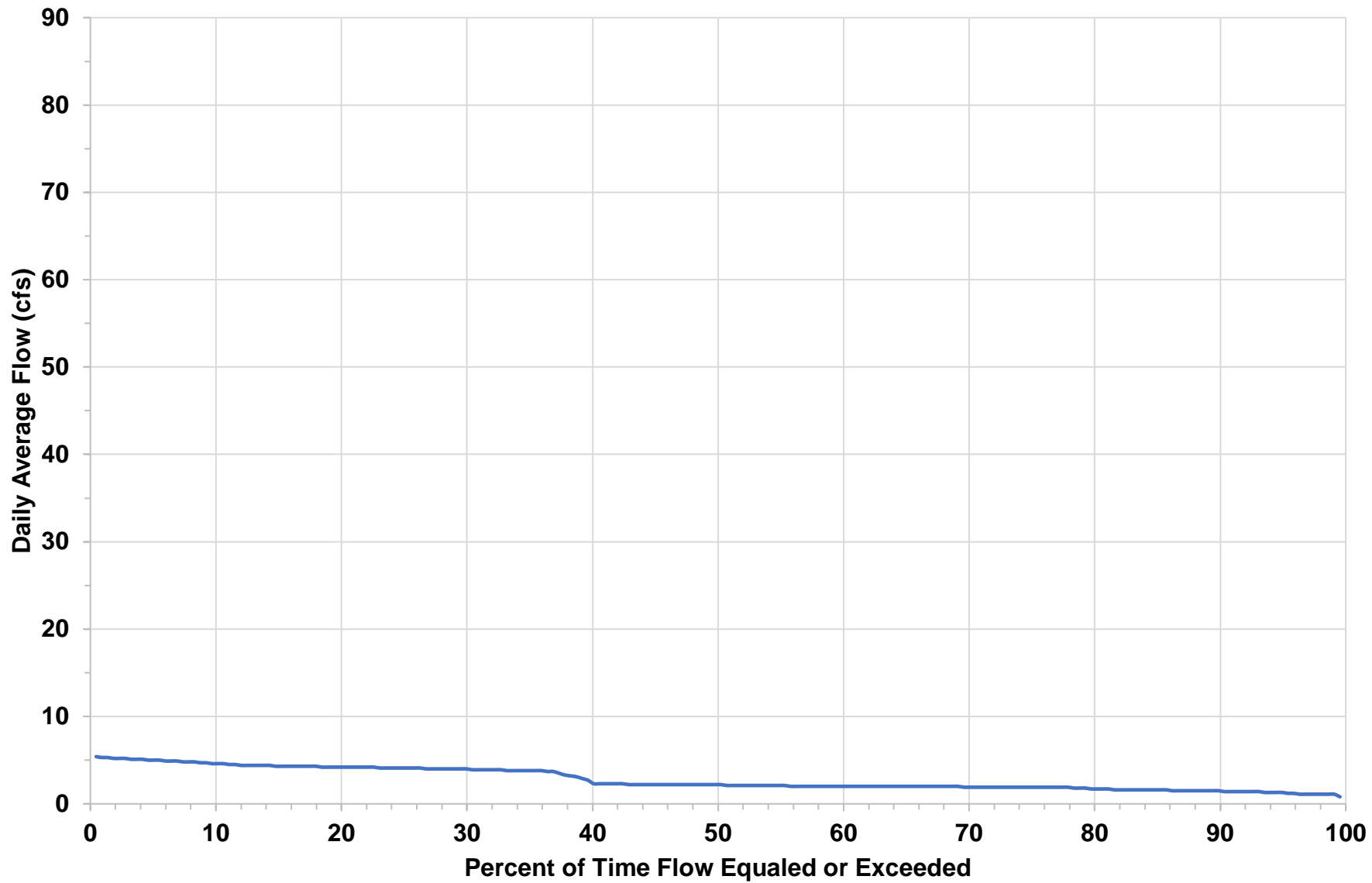
Period of Record October 1, 1997 to September 30, 2019



January Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

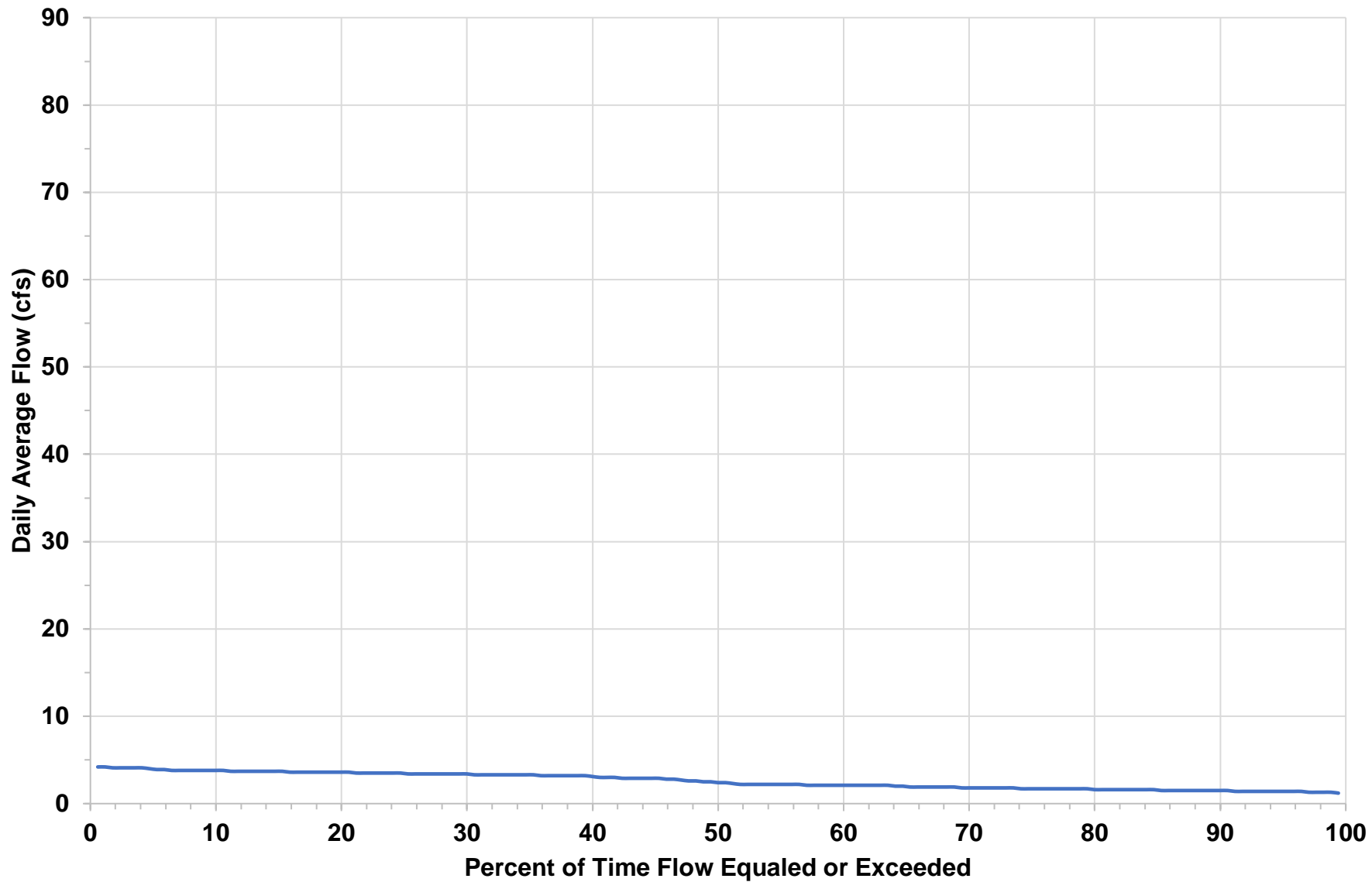
Period of Record October 1, 1997 to September 30, 2019



February Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

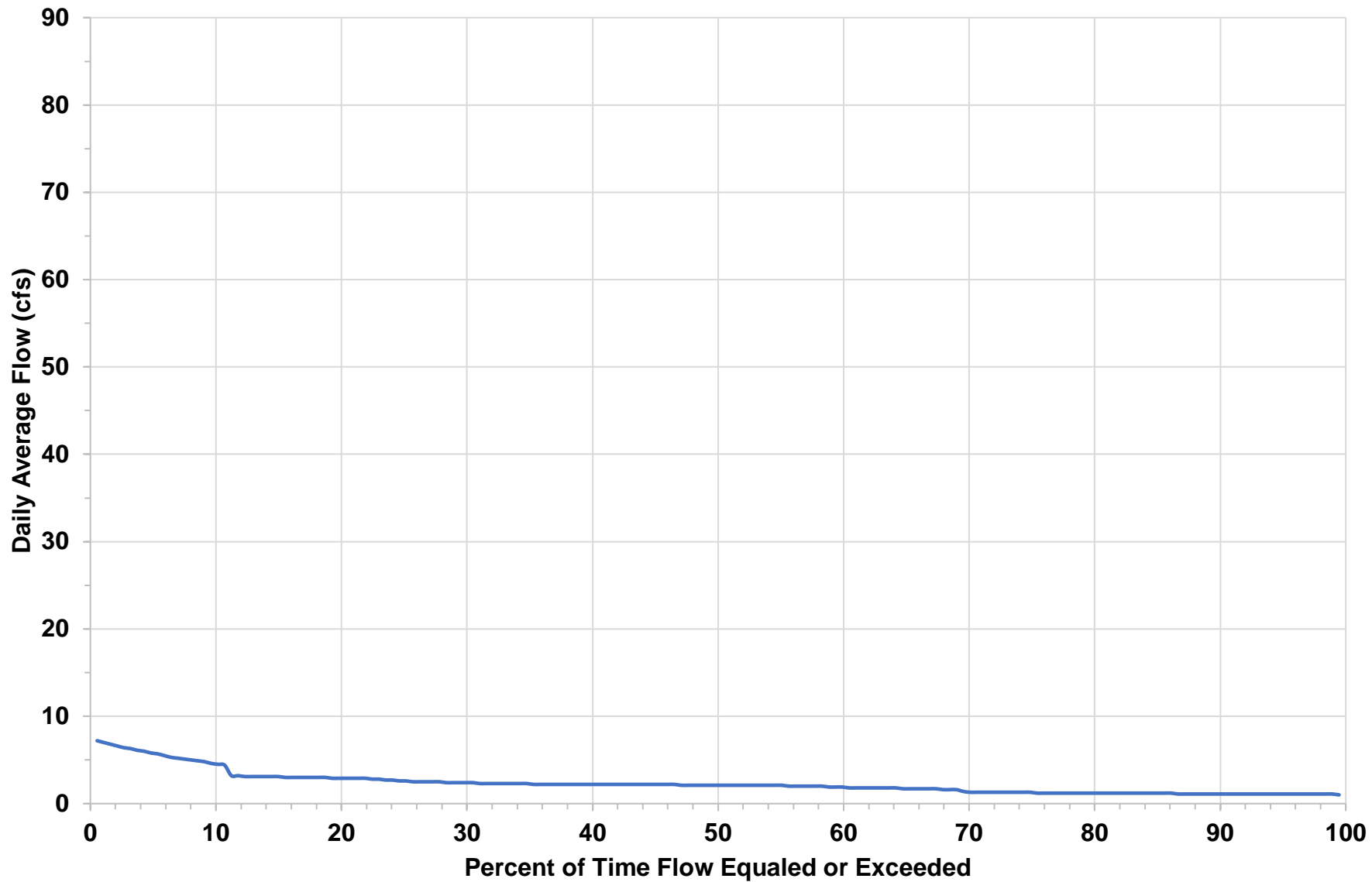
Period of Record October 1, 1997 to September 30, 2019



March Flow Duration Curve - Glacier Creek below Tioga Lake

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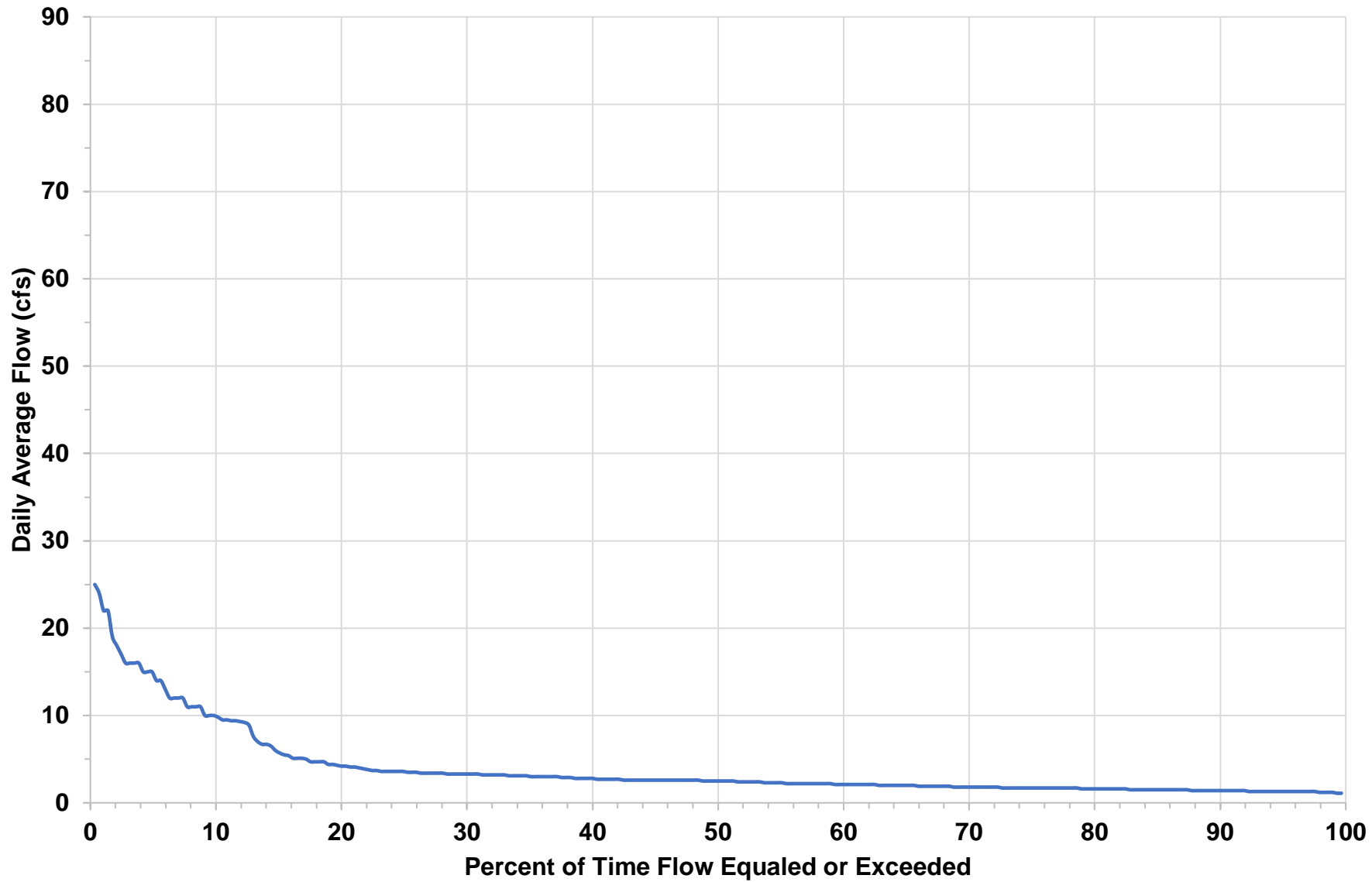
Period of Record October 1, 1997 to September 30, 2019



April Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

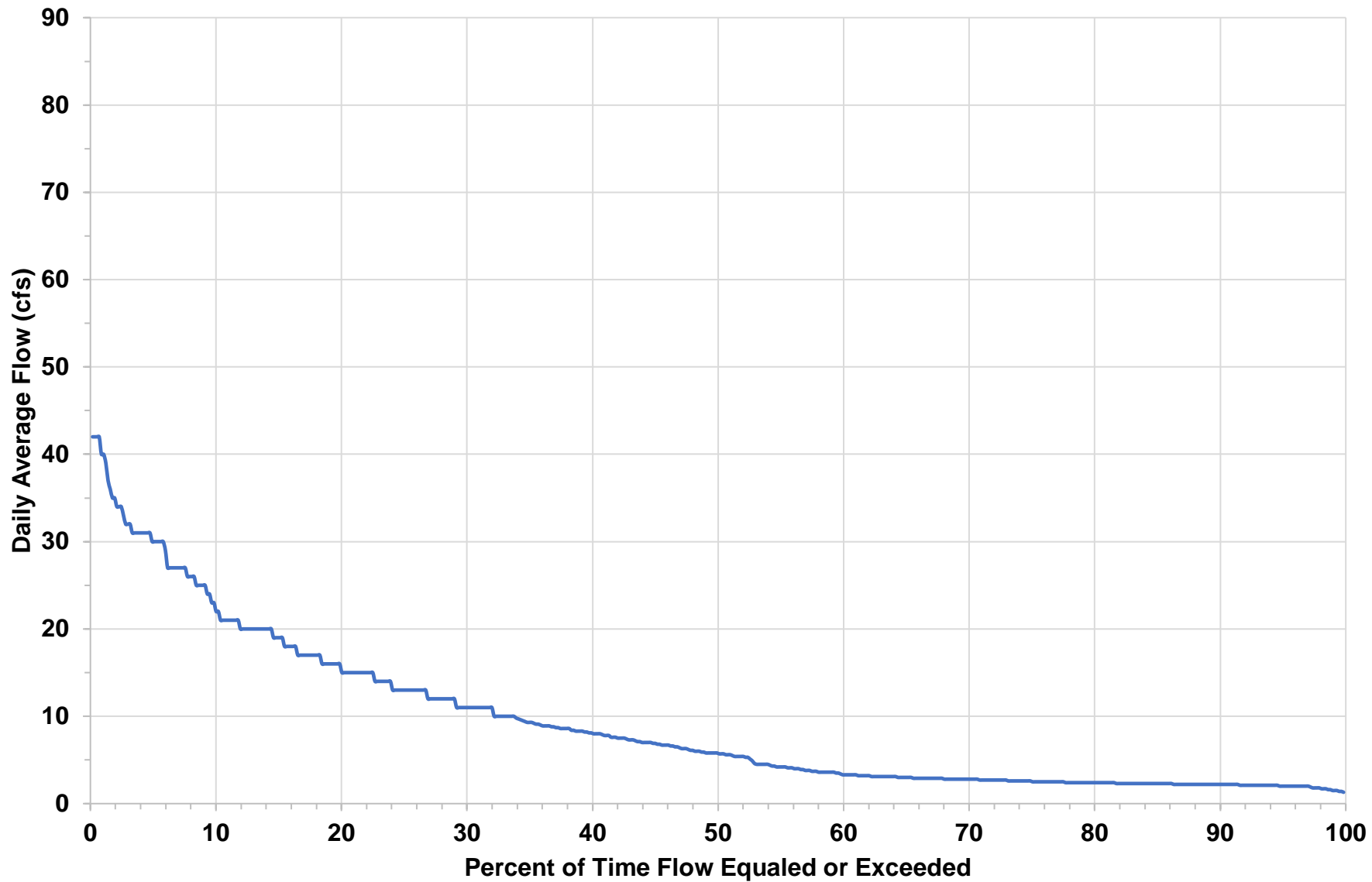
Period of Record October 1, 1997 to September 30, 2019



May Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

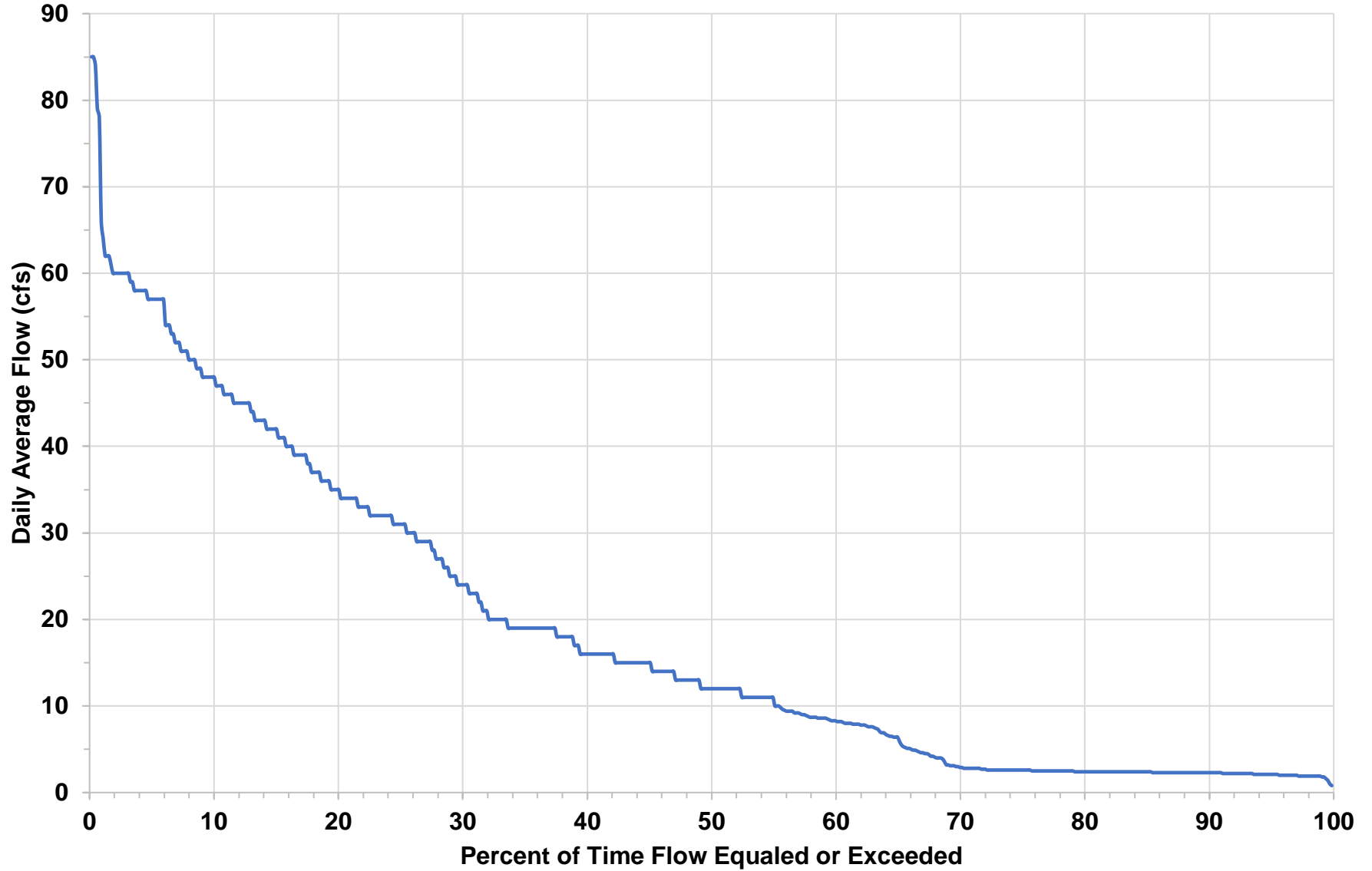
Period of Record October 1, 1997 to September 30, 2019



June Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

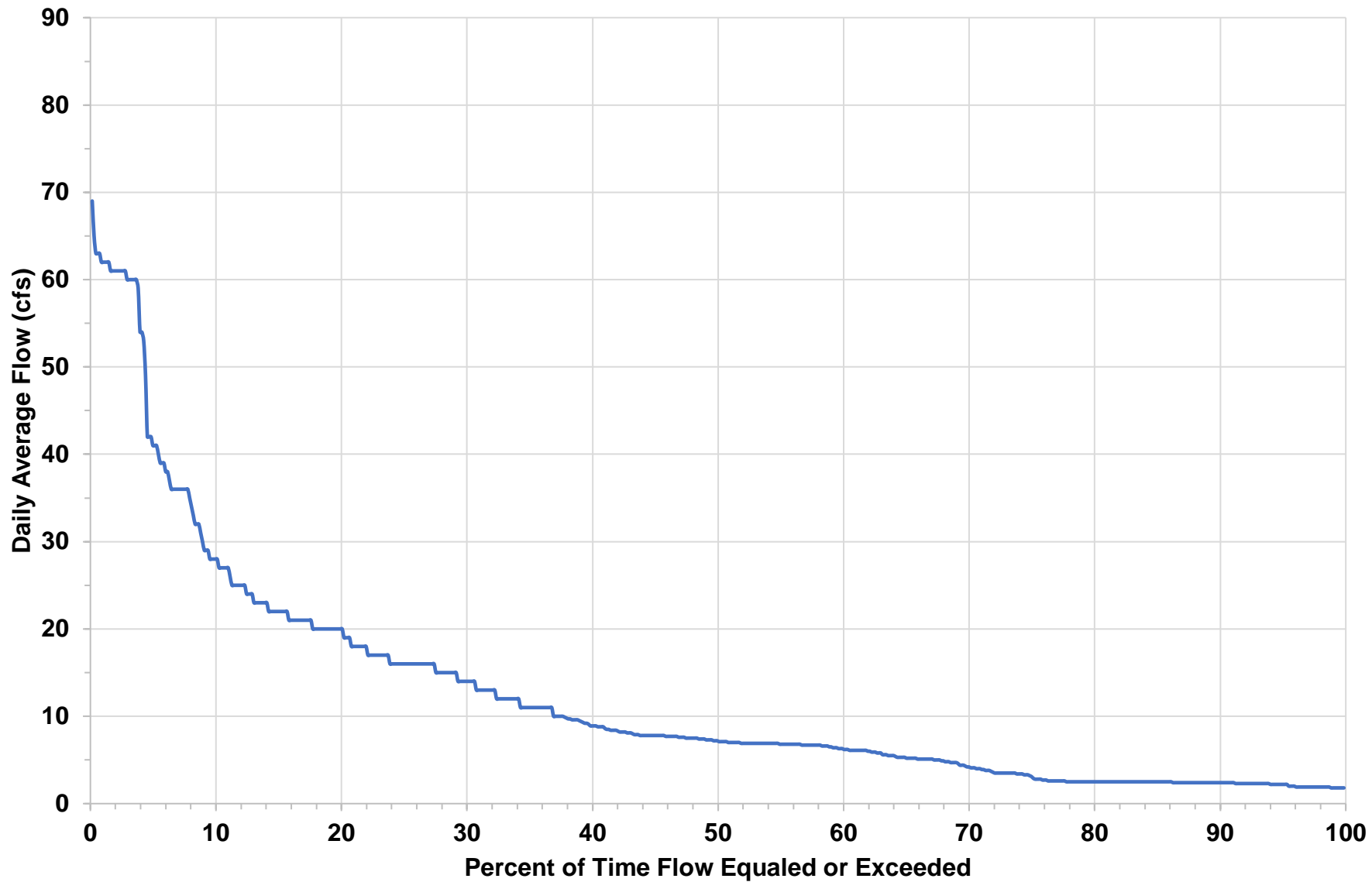
Period of Record October 1, 1997 to September 30, 2019



July Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

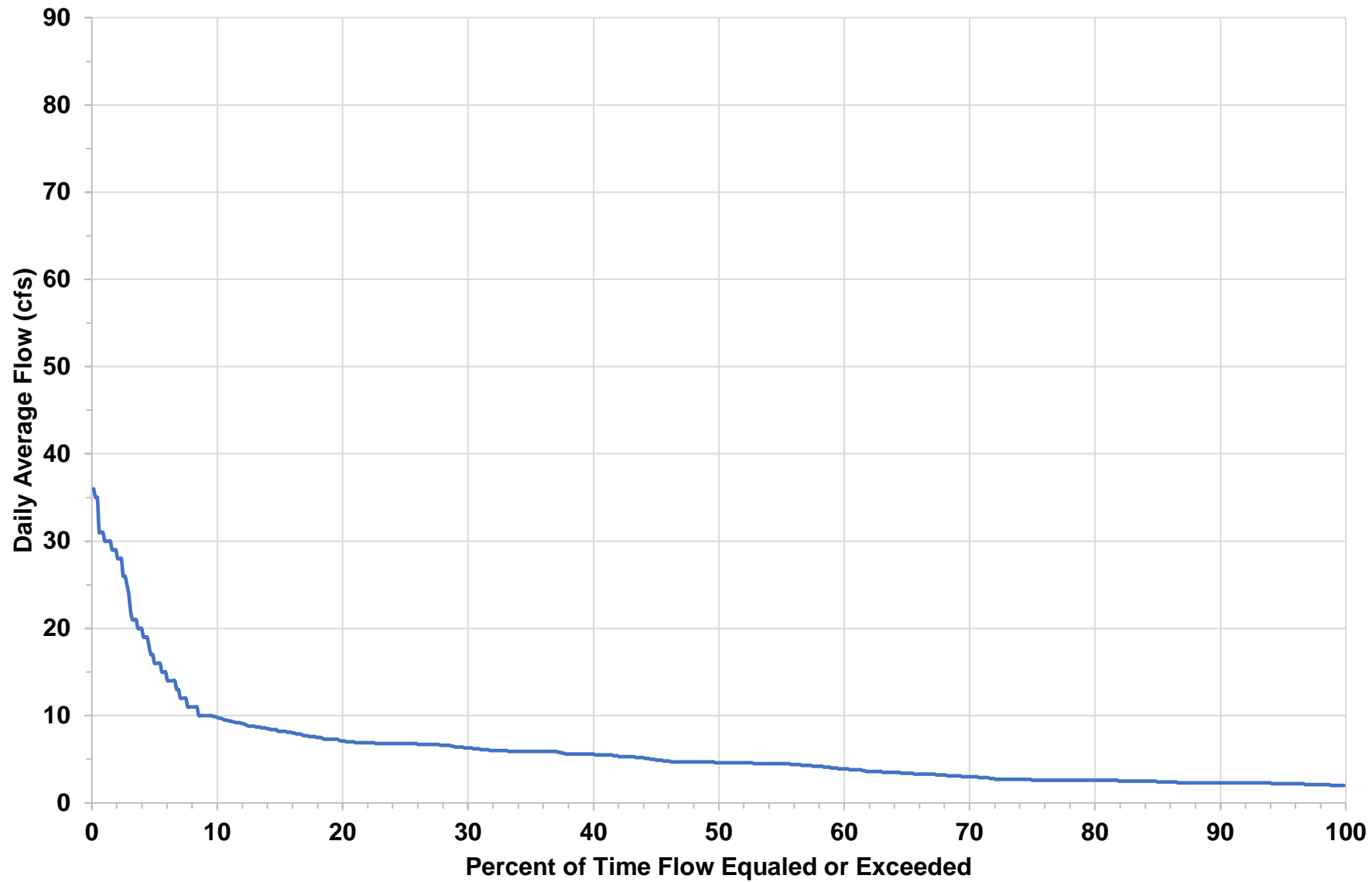
Period of Record October 1, 1997 to September 30, 2019



August Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

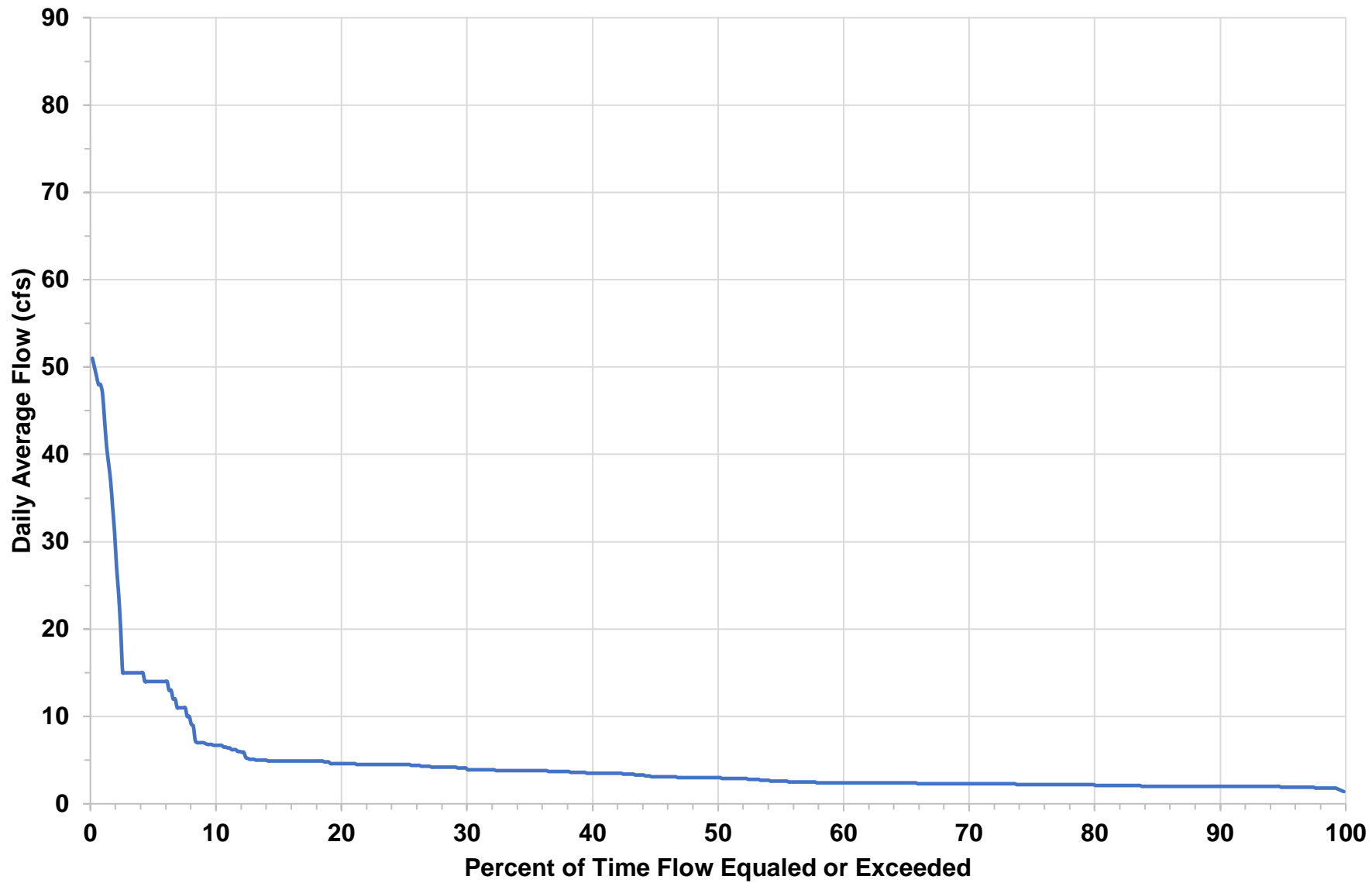
Period of Record October 1, 1997 to September 30, 2019



September Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

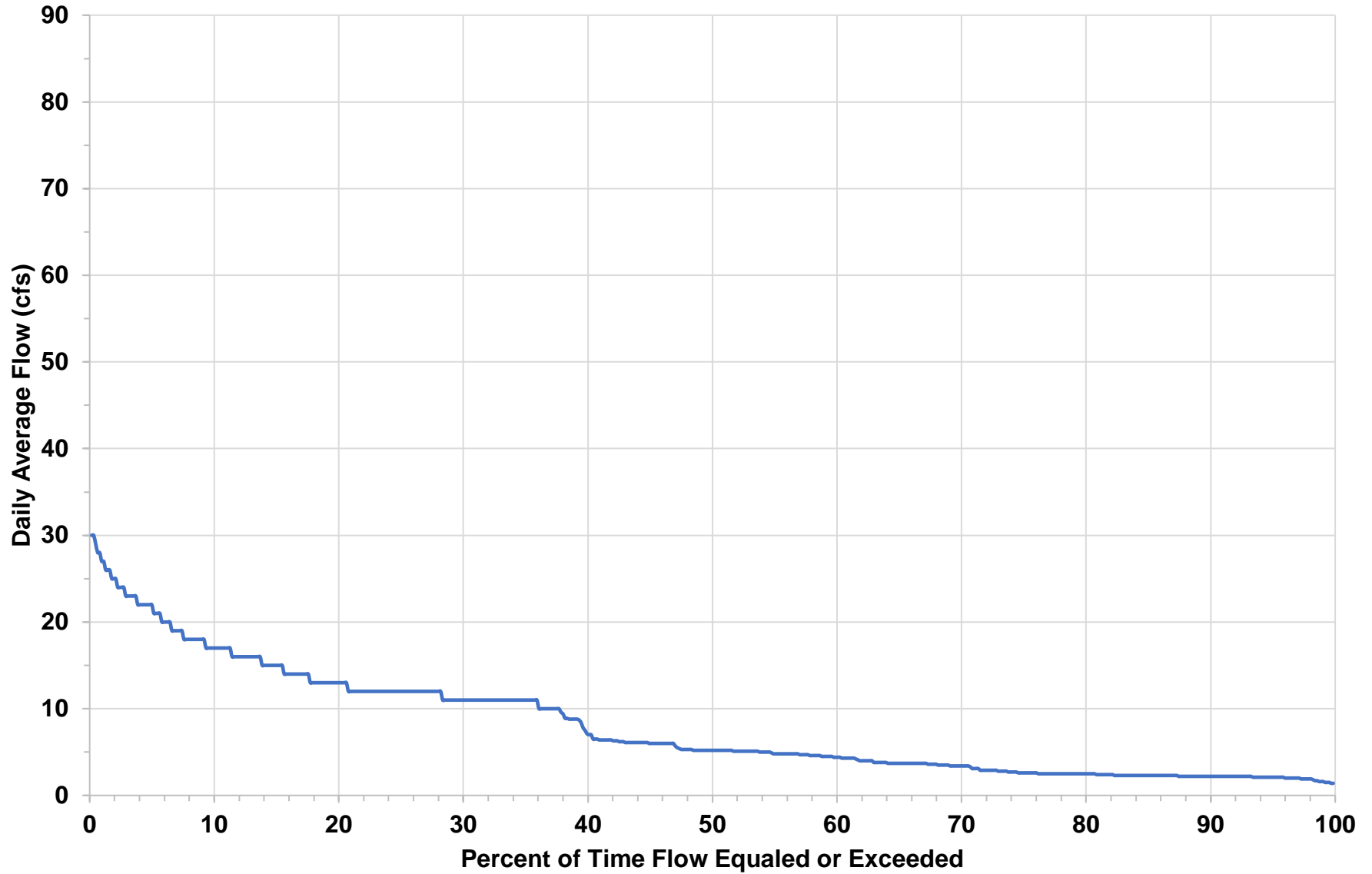
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October Flow Duration Curve - Glacier Creek below Tioga Lake

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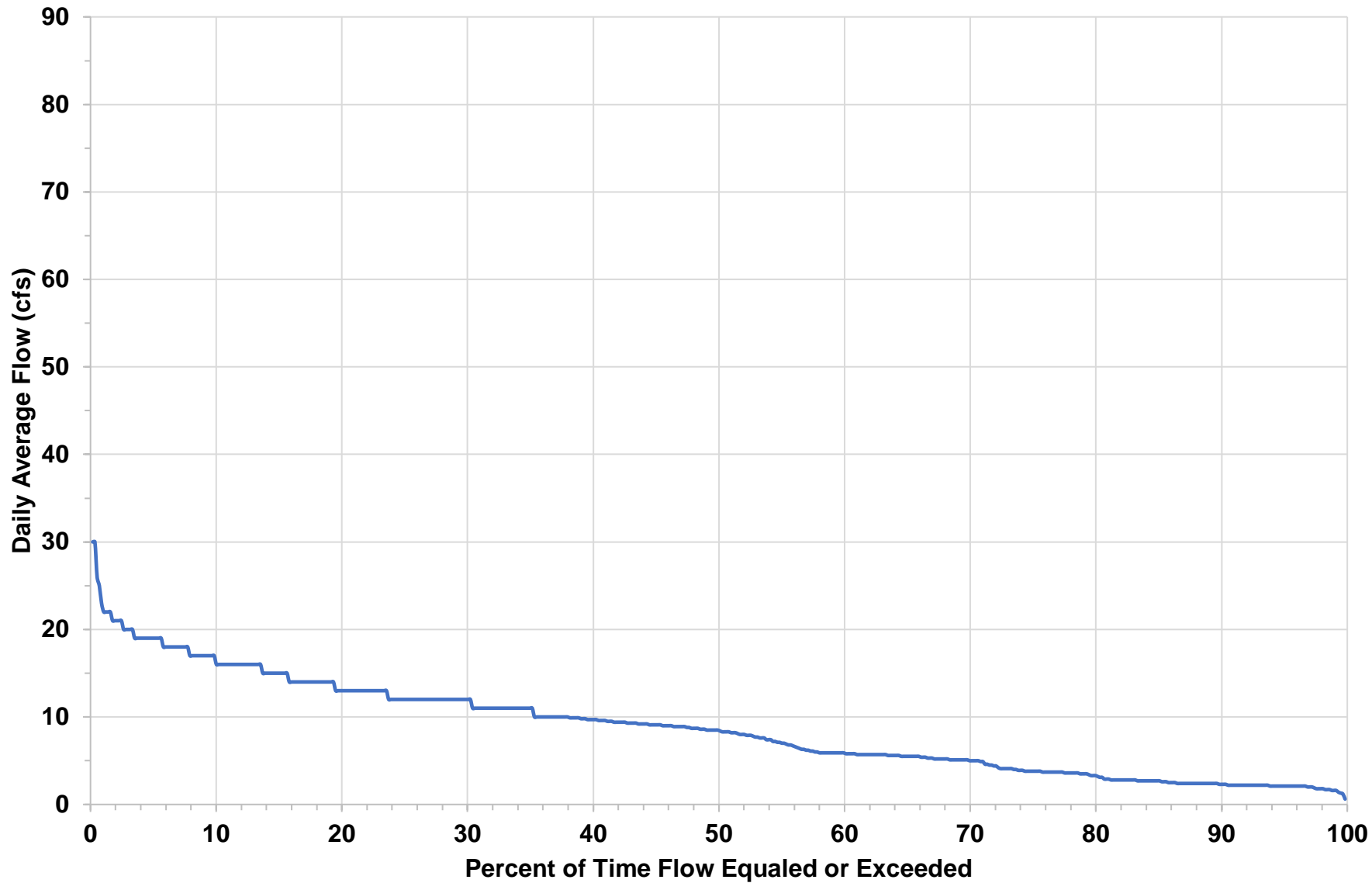
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November Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

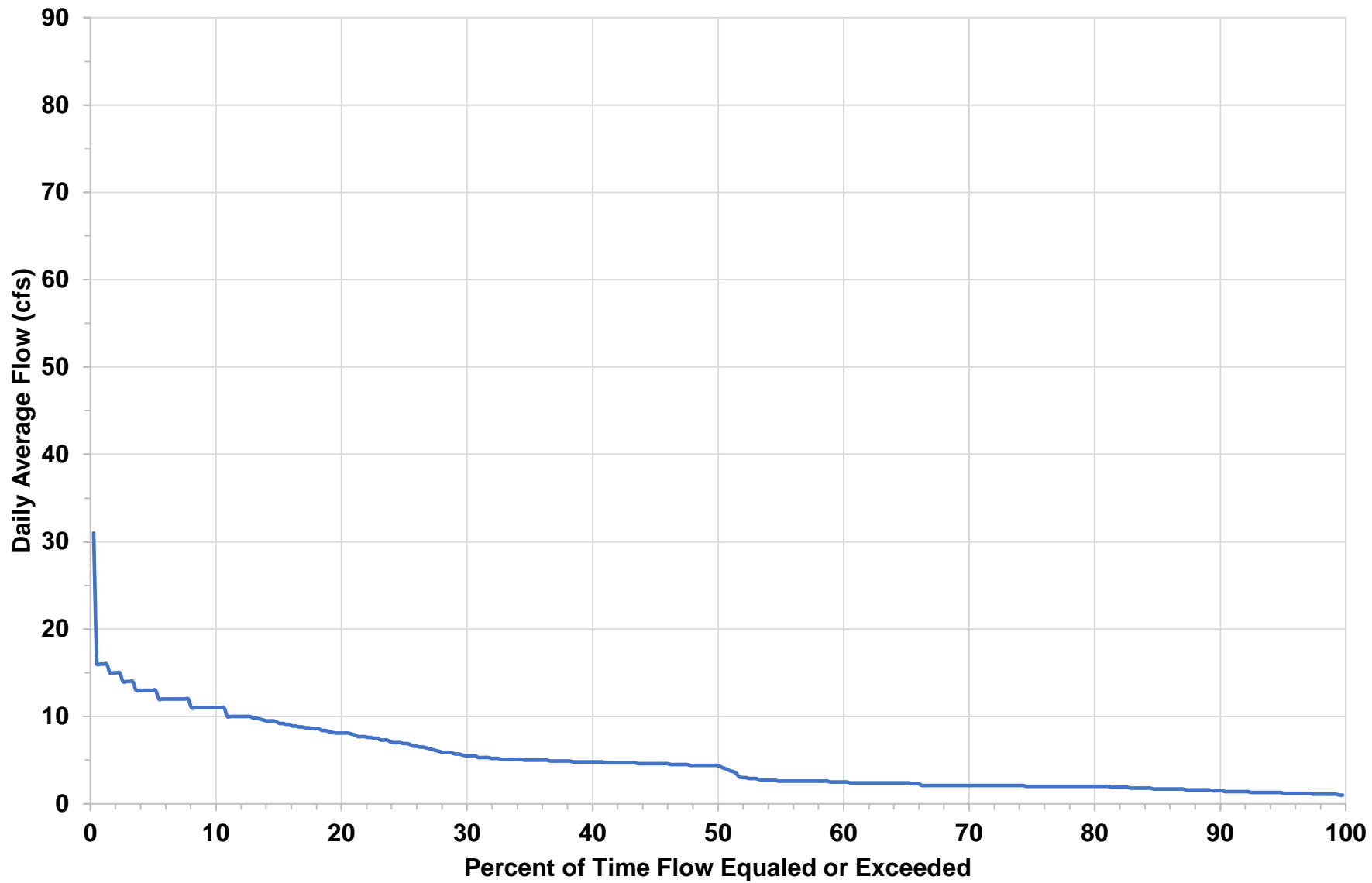
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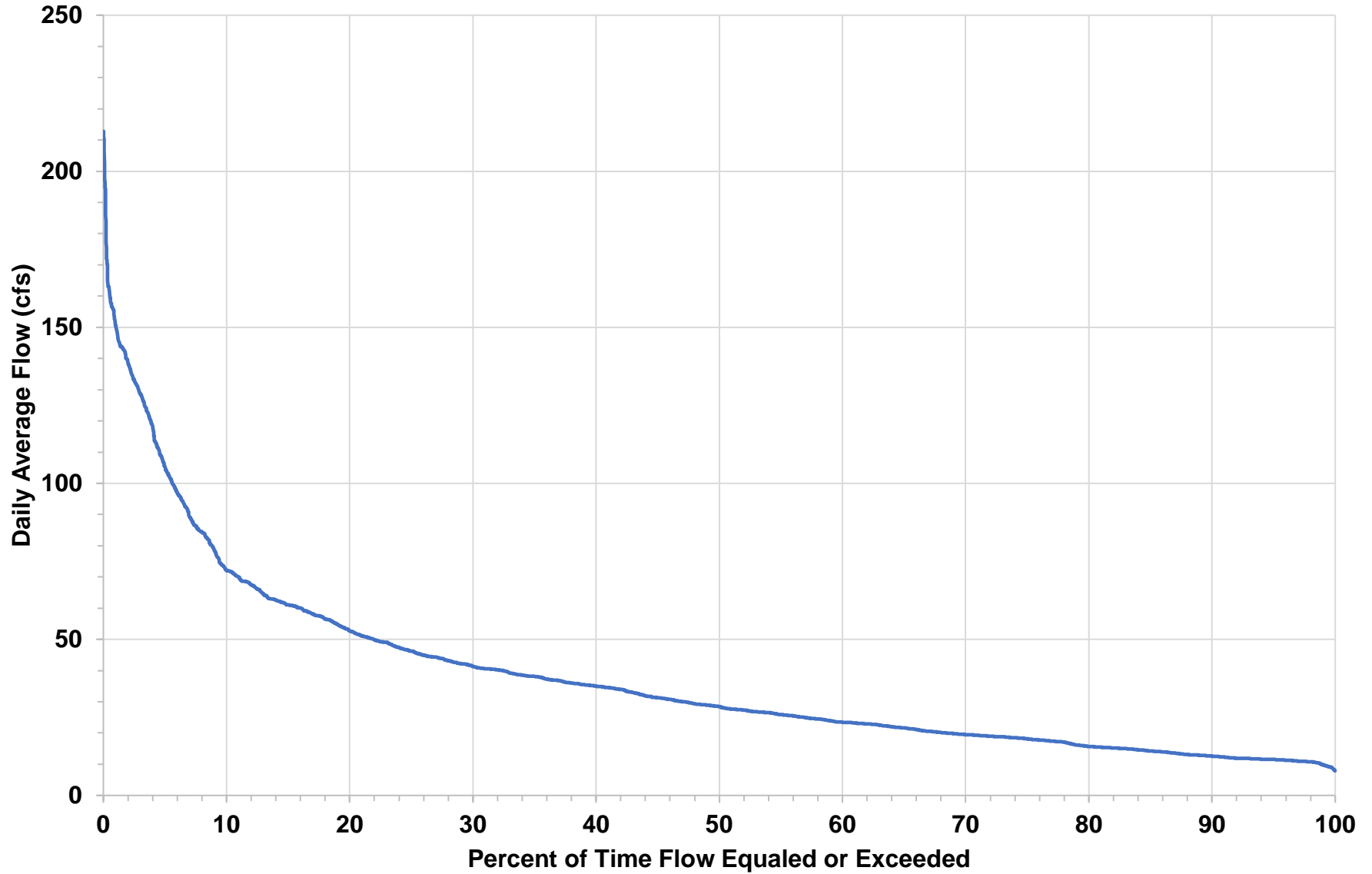
December Flow Duration Curve - Glacier Creek below Tioga Lake

USGS Gage No. 10287720

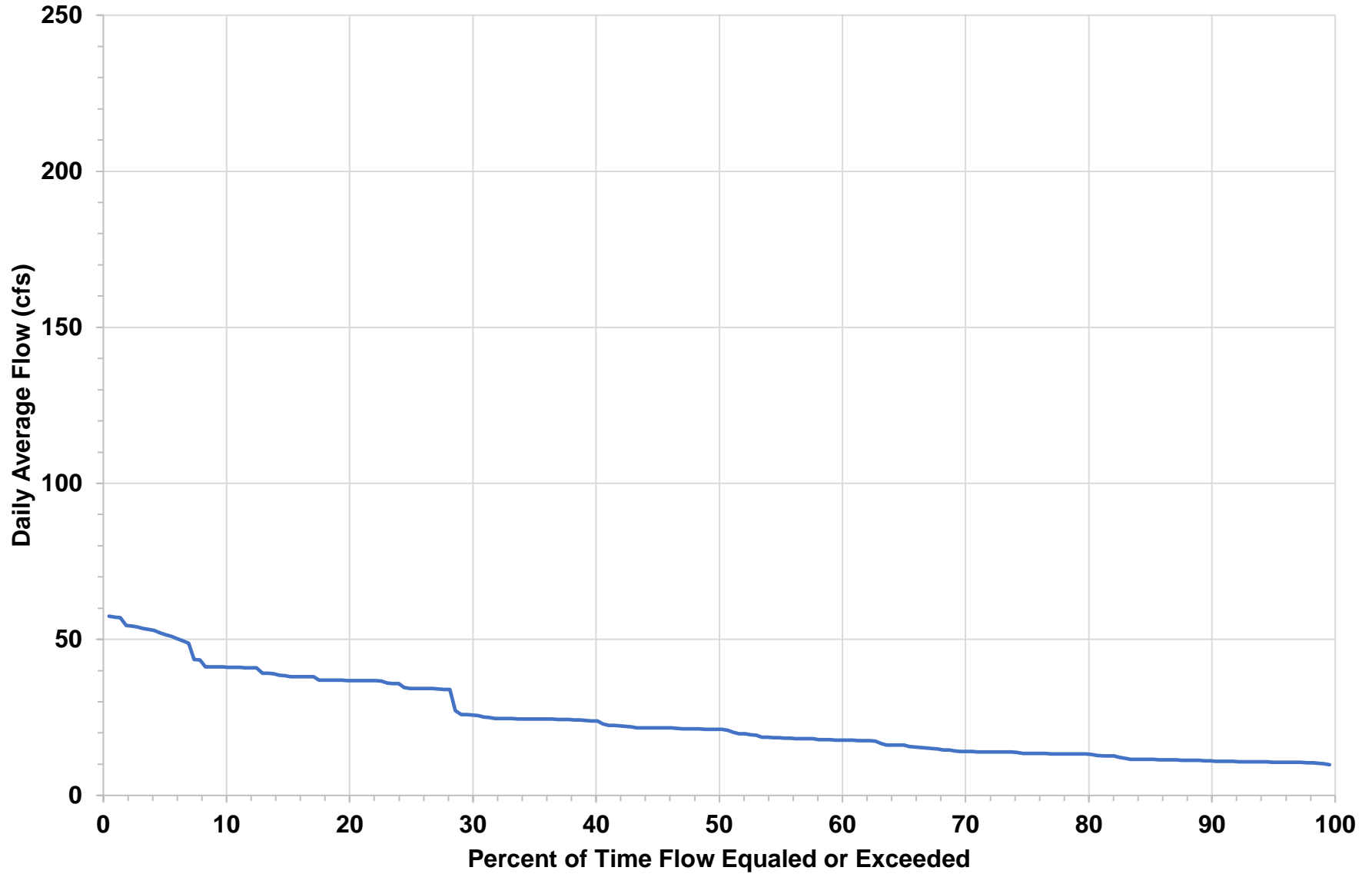
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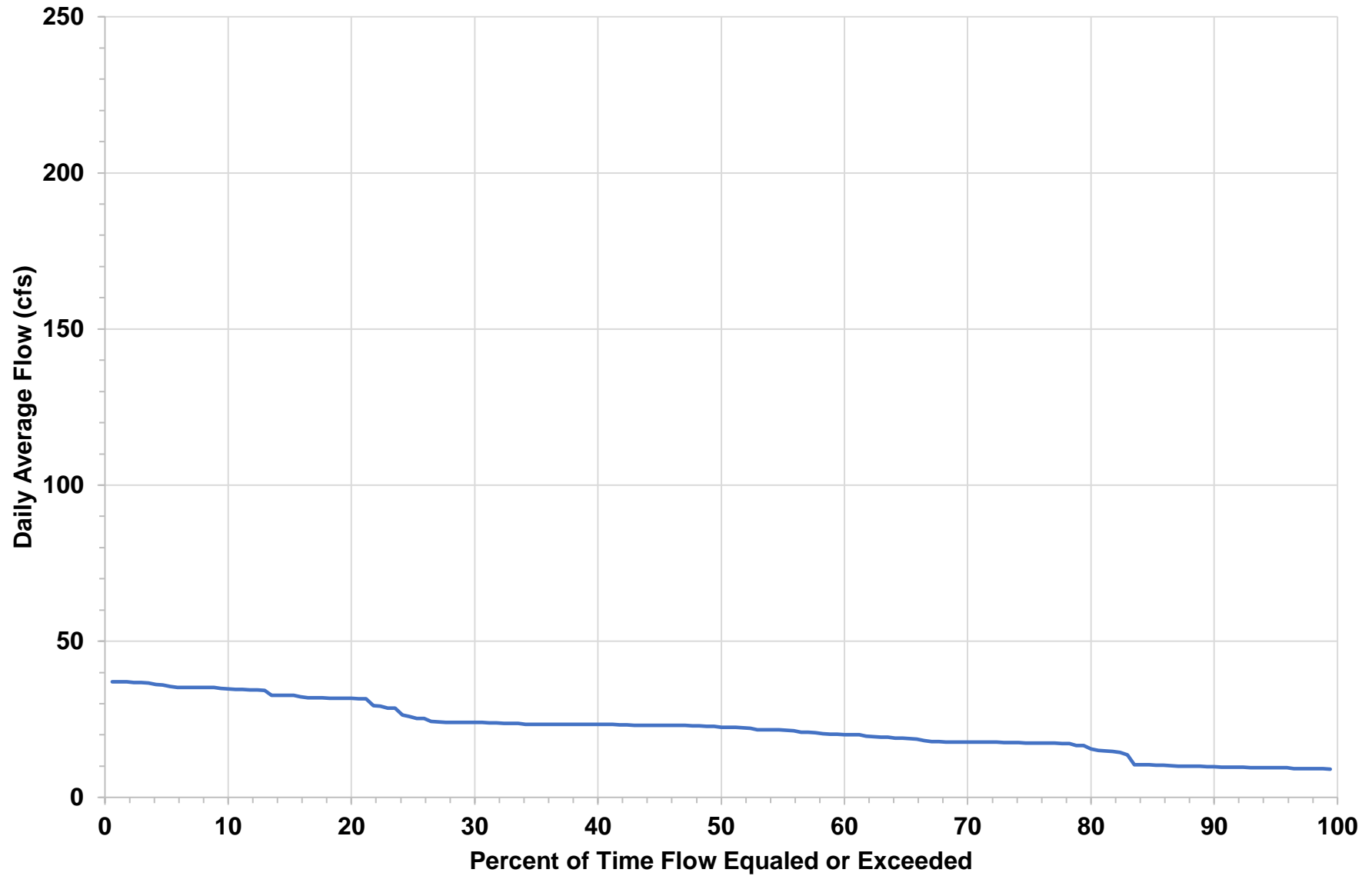
Annual Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



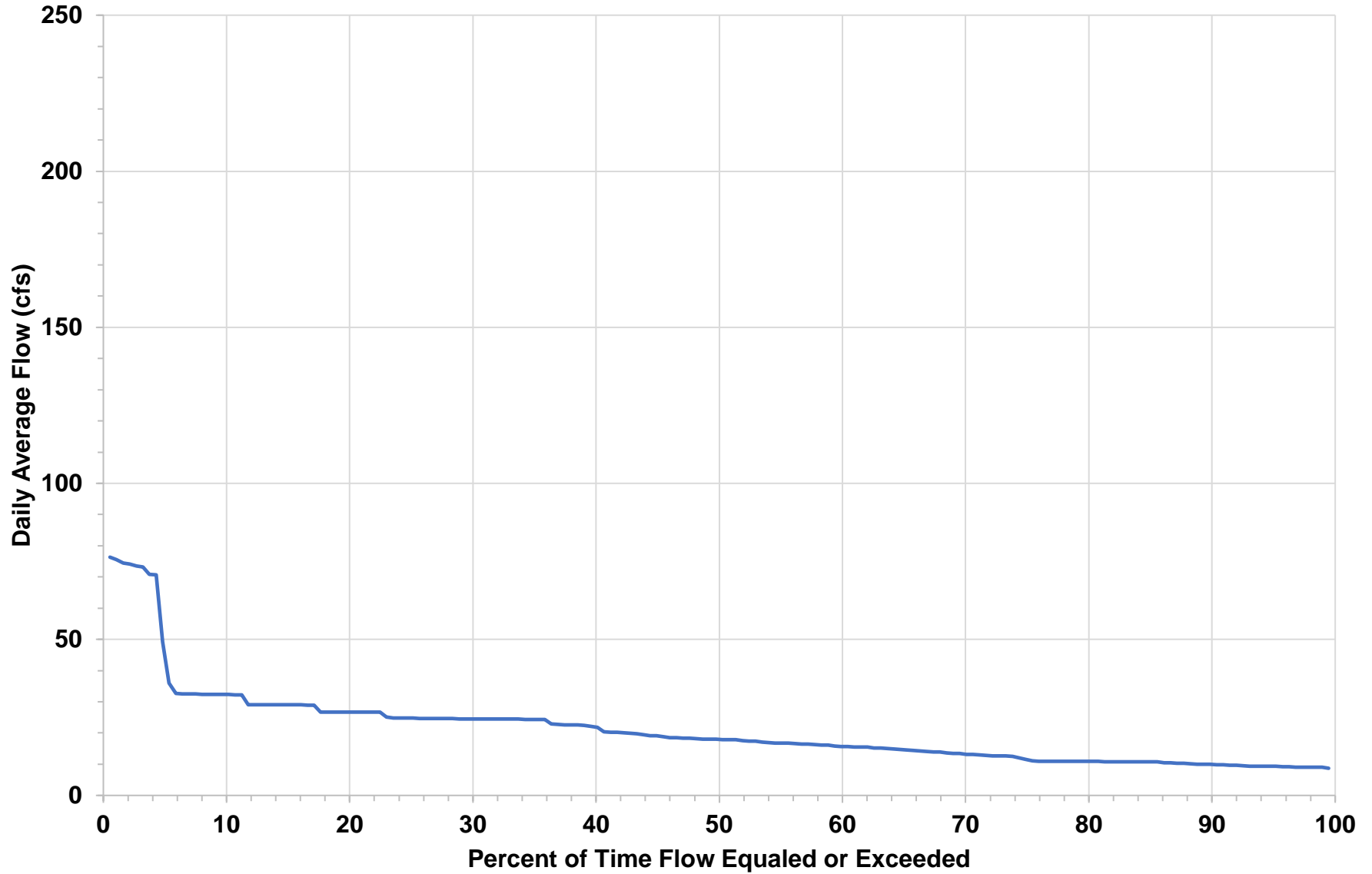
January Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



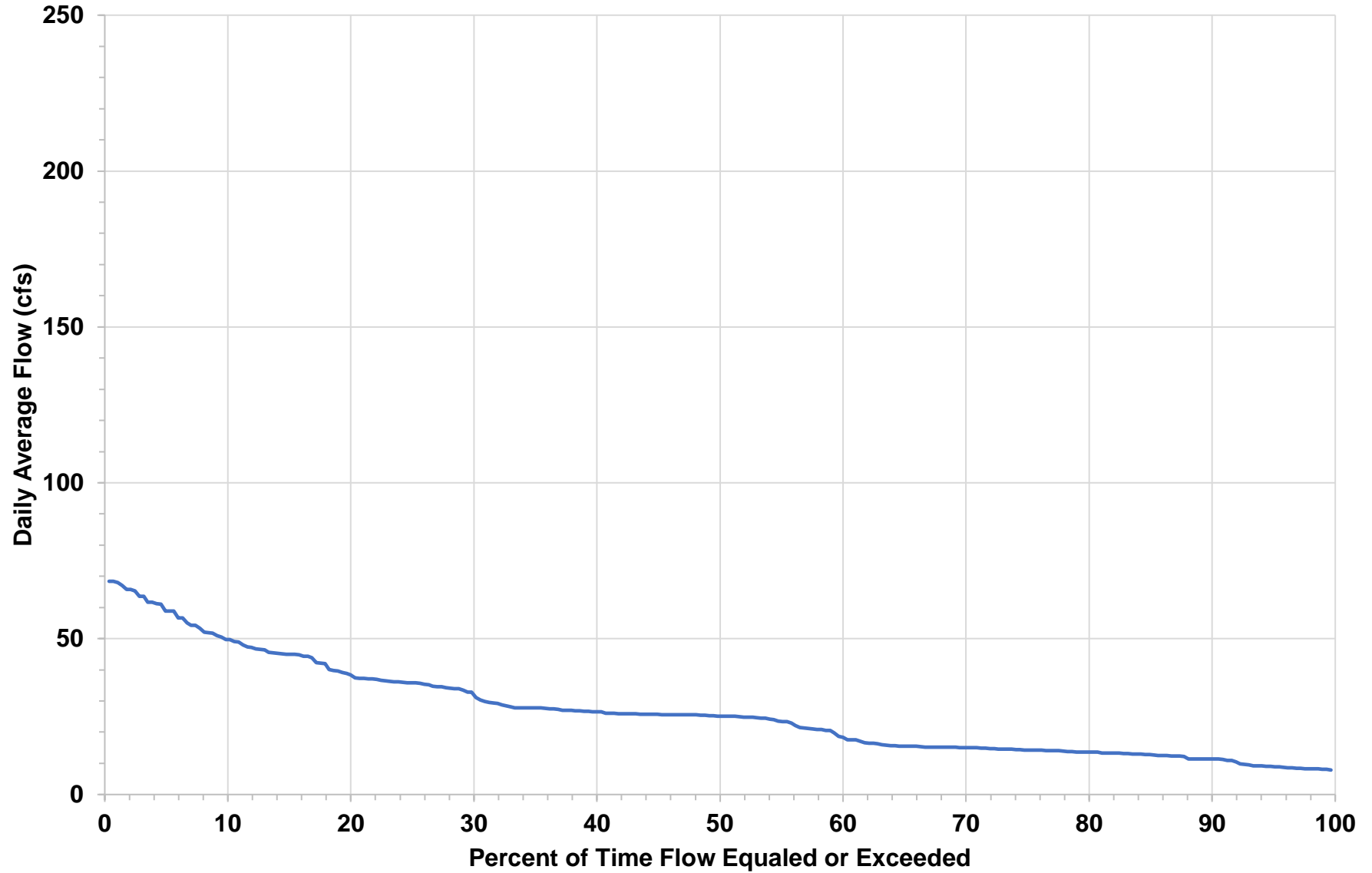
February Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



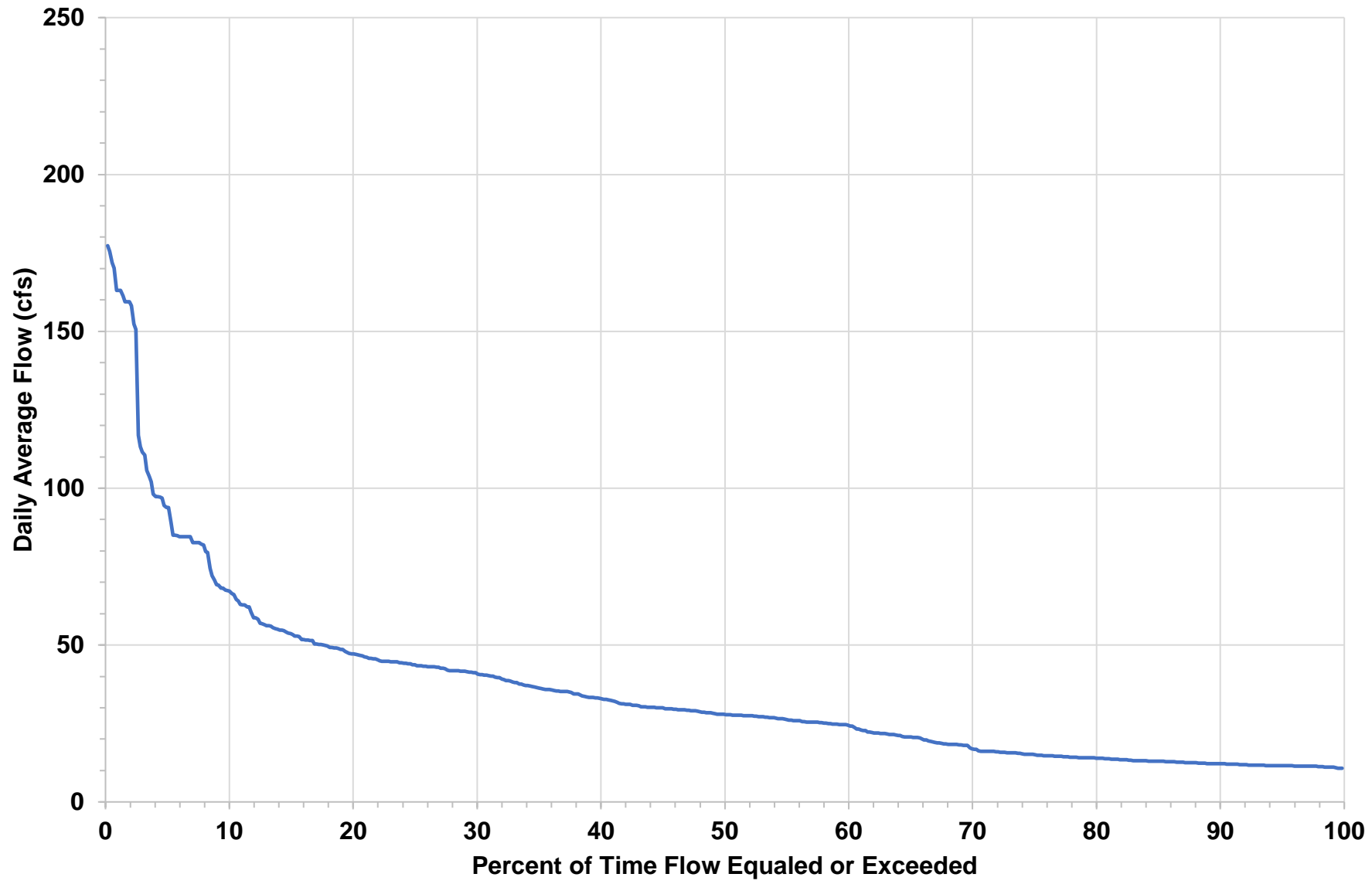
March Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



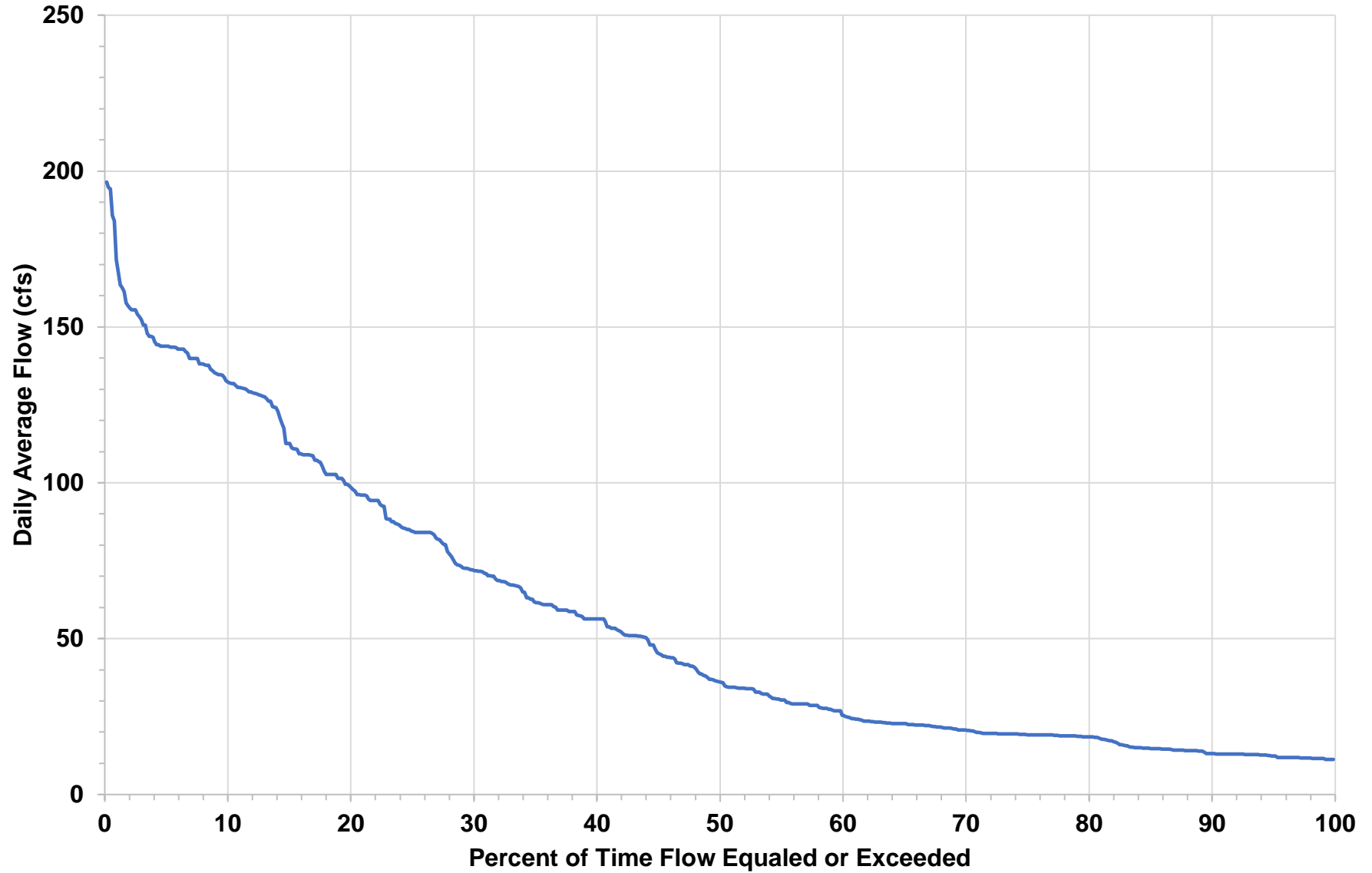
April Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



May Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



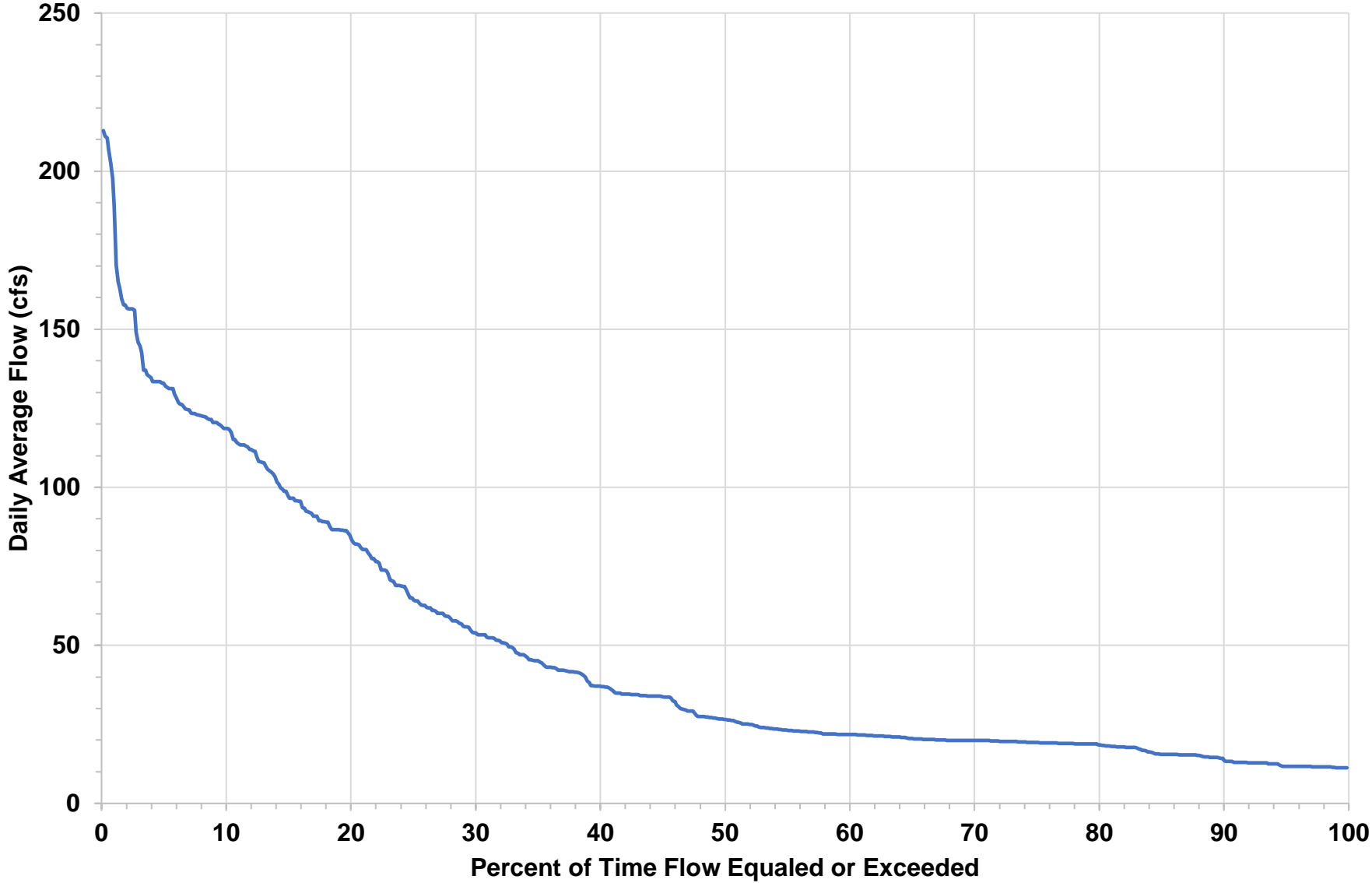
June Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



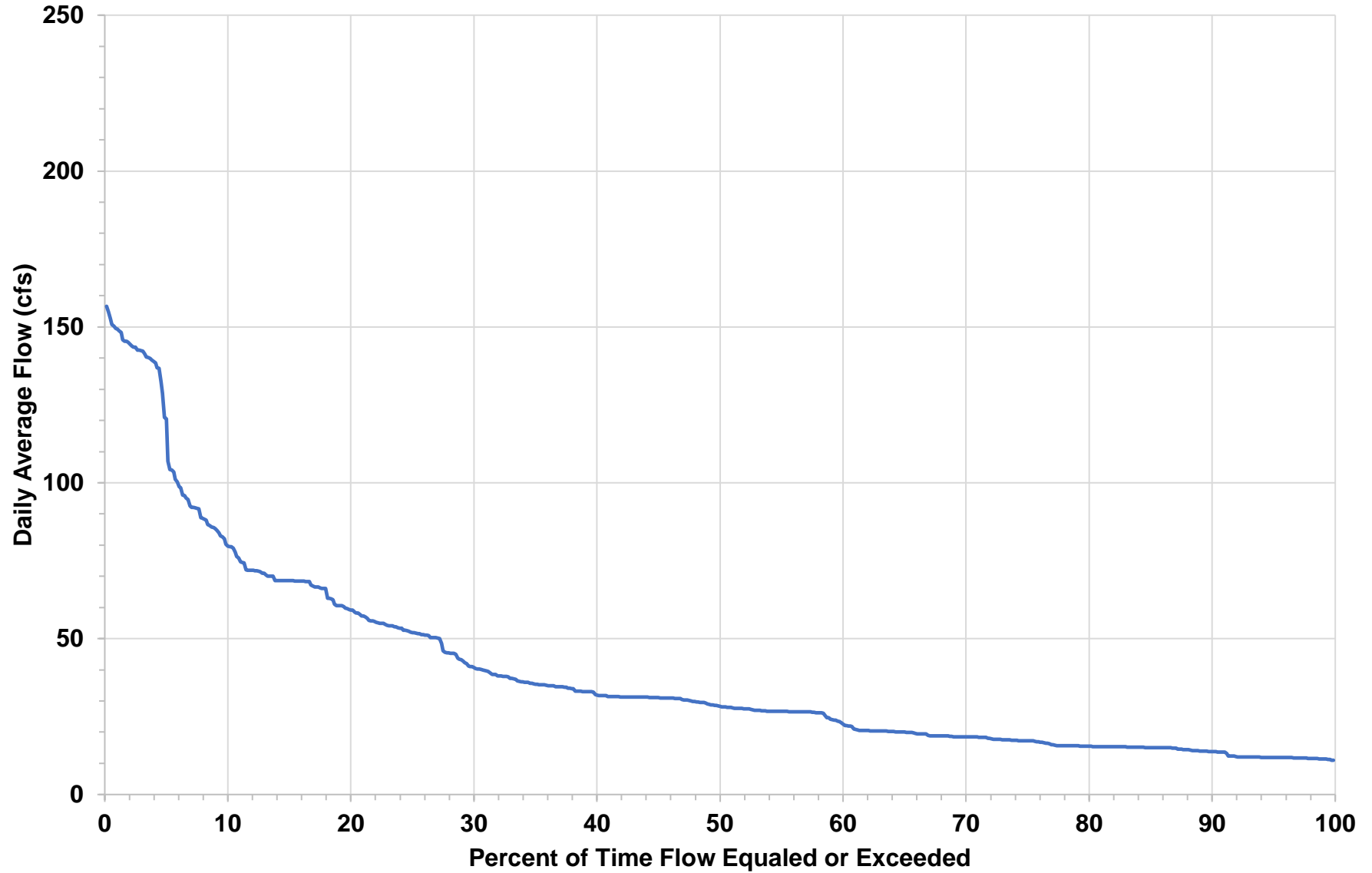
July Flow Duration Curve - Lee Vining below Rhinedollar Dam

Prorated from USGS Gage No. 10287720 and 10287655

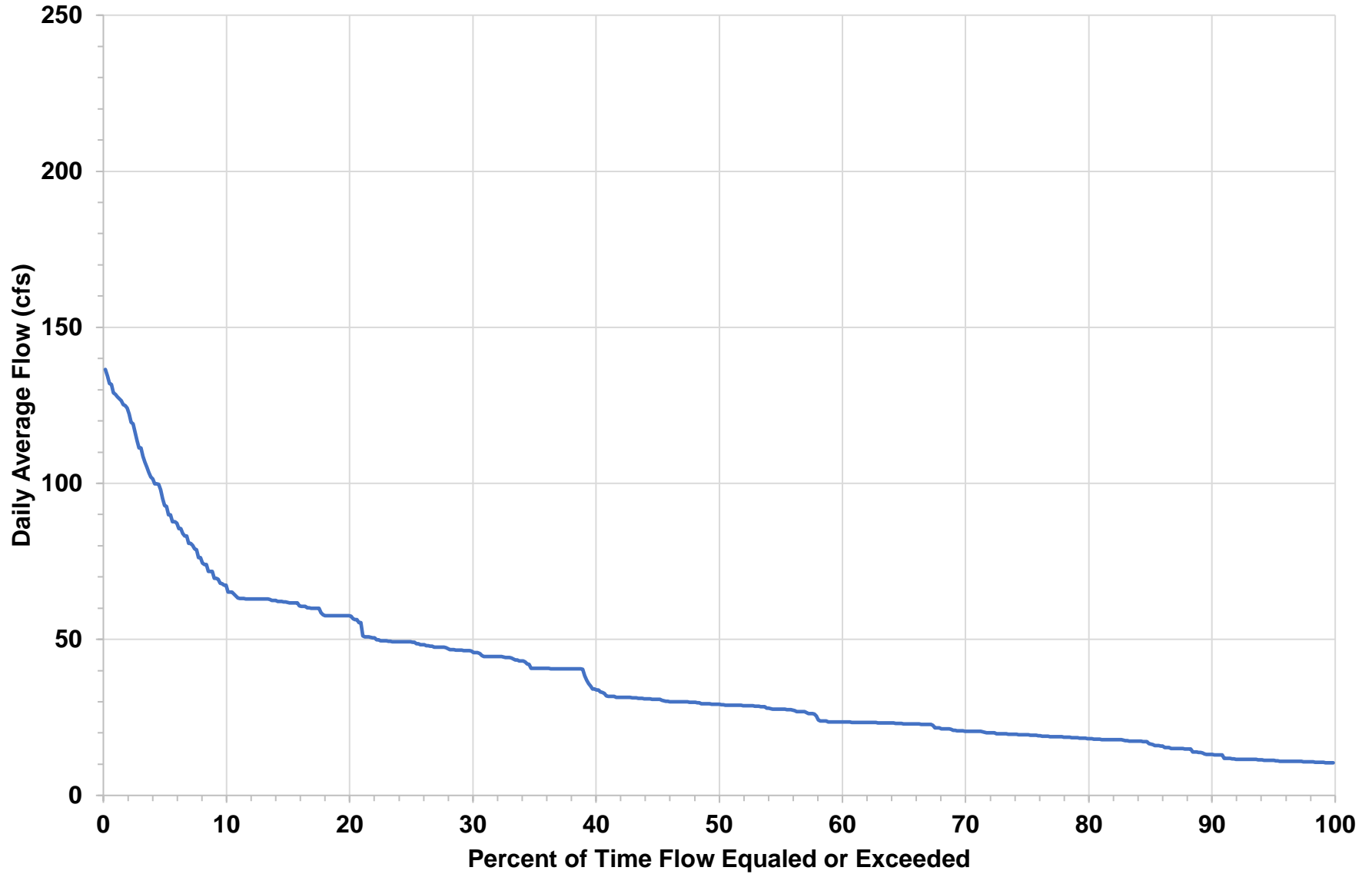
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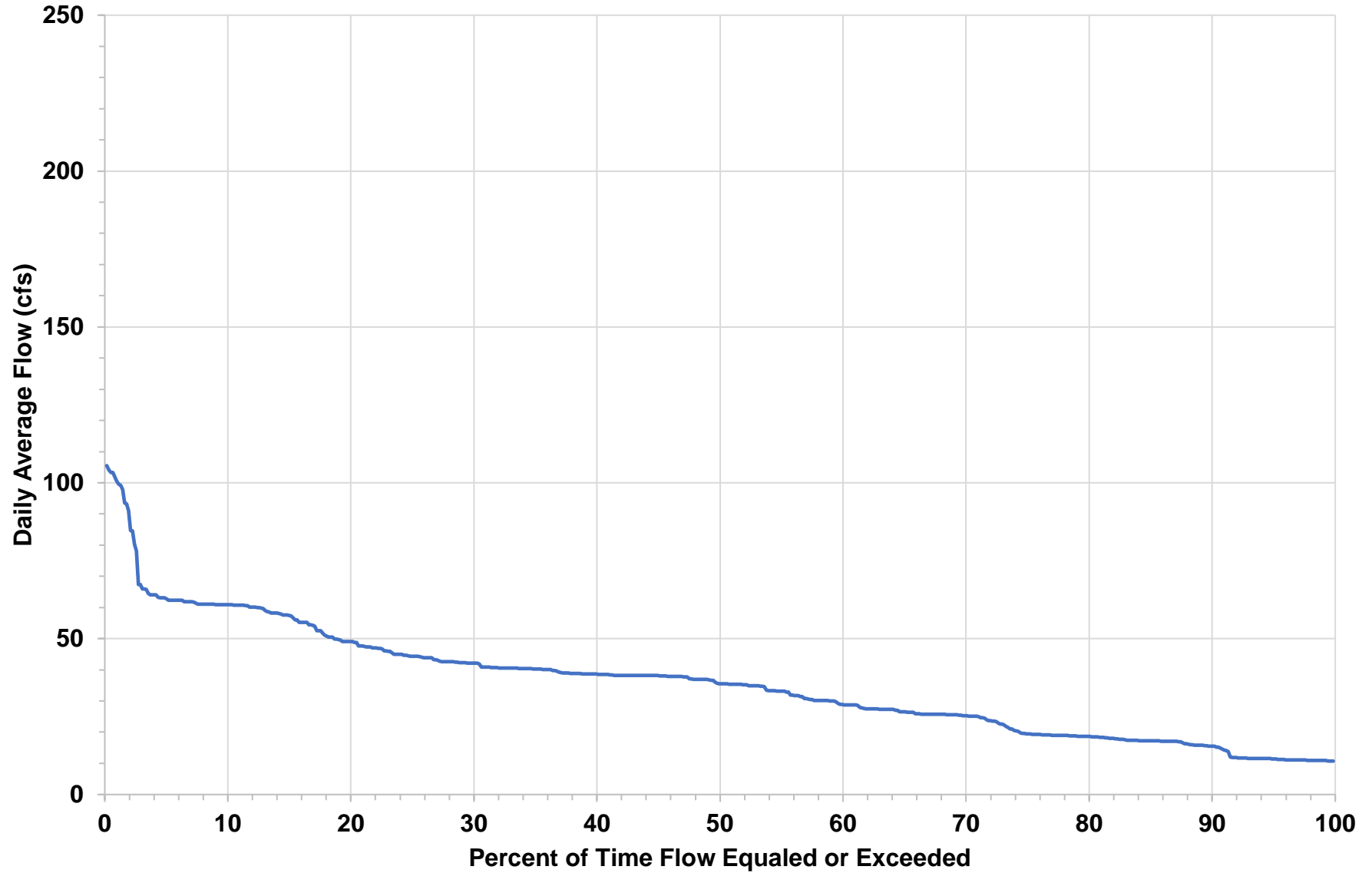
August Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



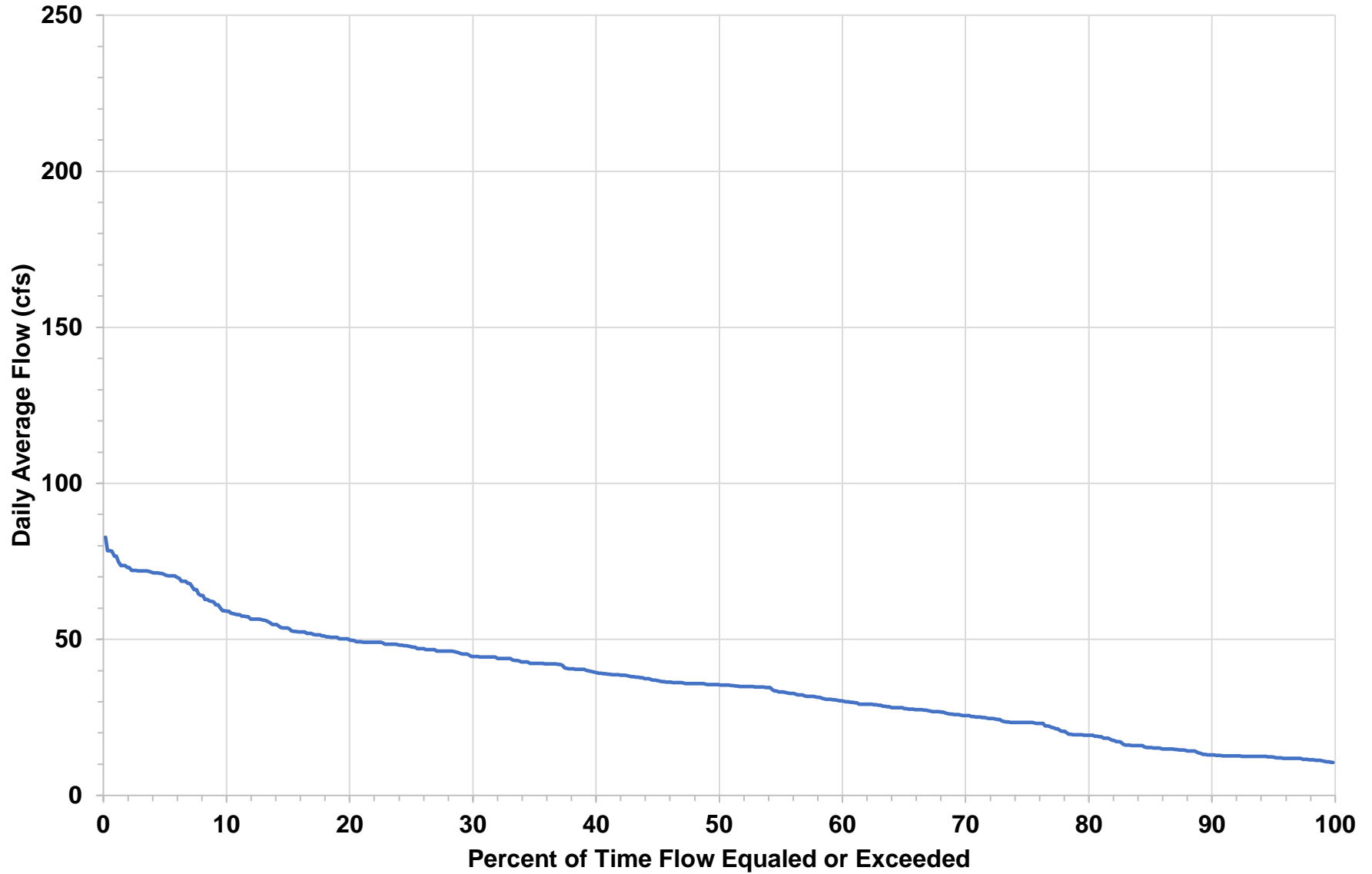
September Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



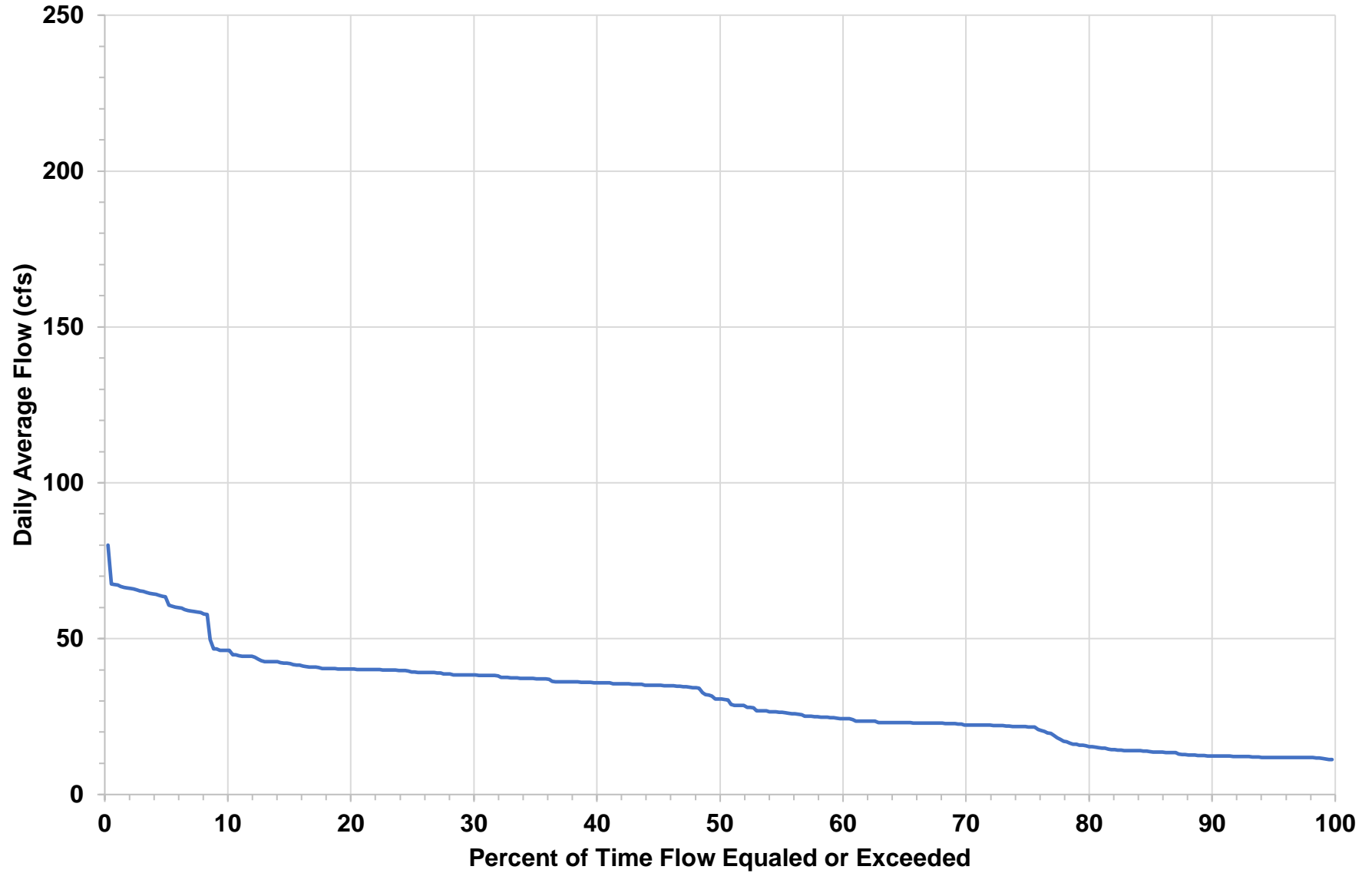
October Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



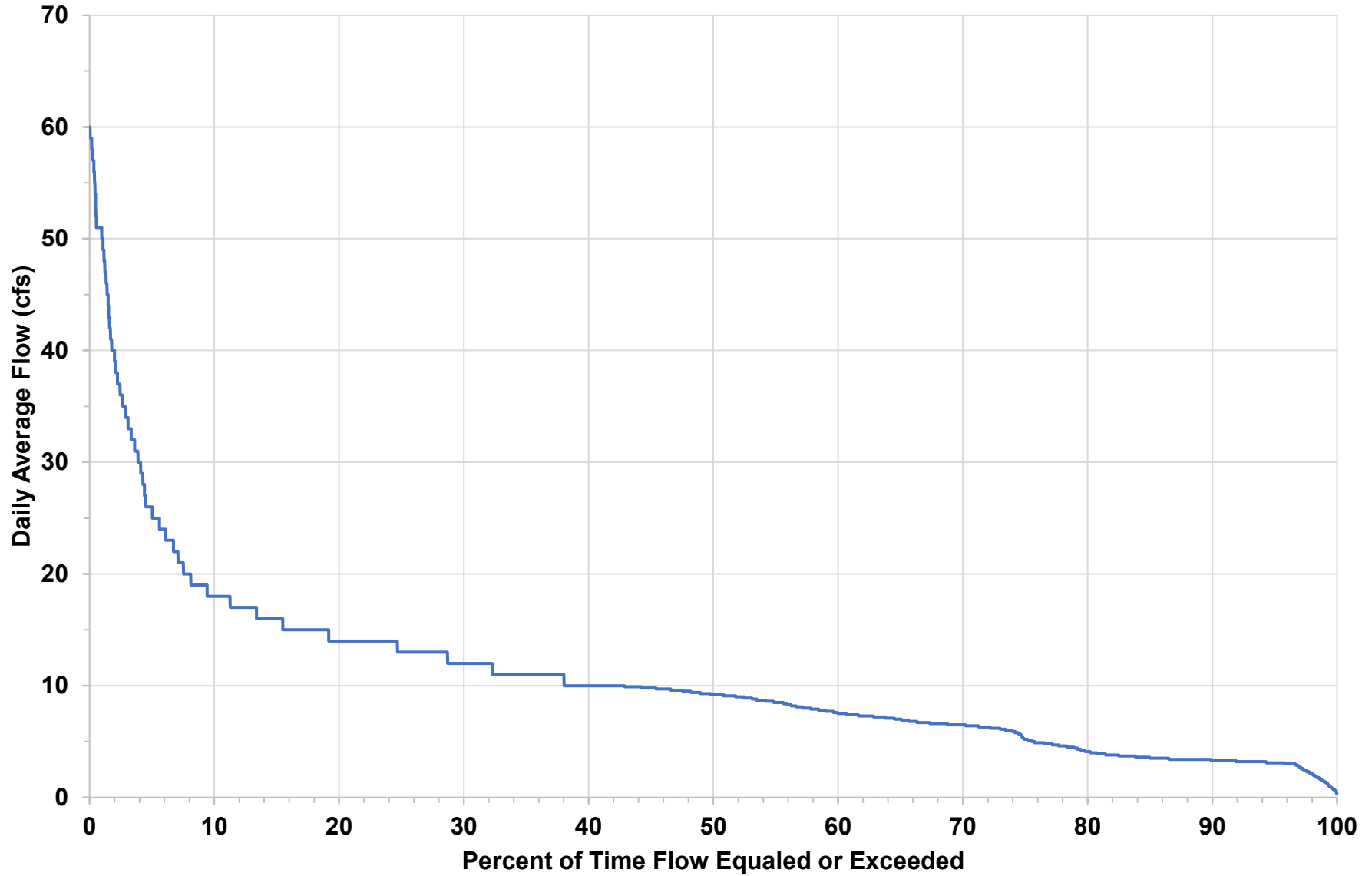
November Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



December Flow Duration Curve - Lee Vining below Rhinedollar Dam
Prorated from USGS Gage No. 10287720 and 10287655
Period of Record October 1, 1997 to September 30, 2019



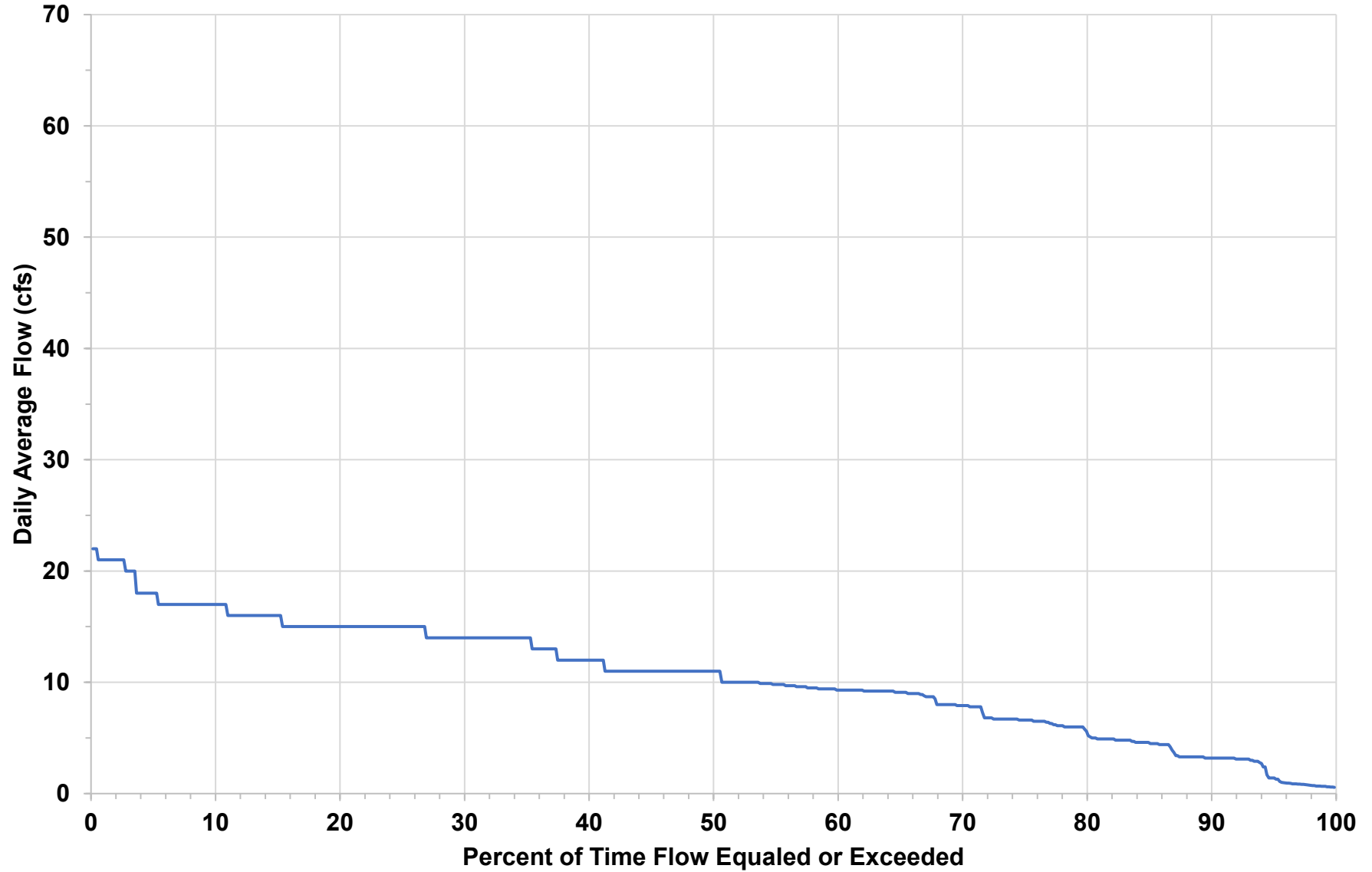
Annual Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019



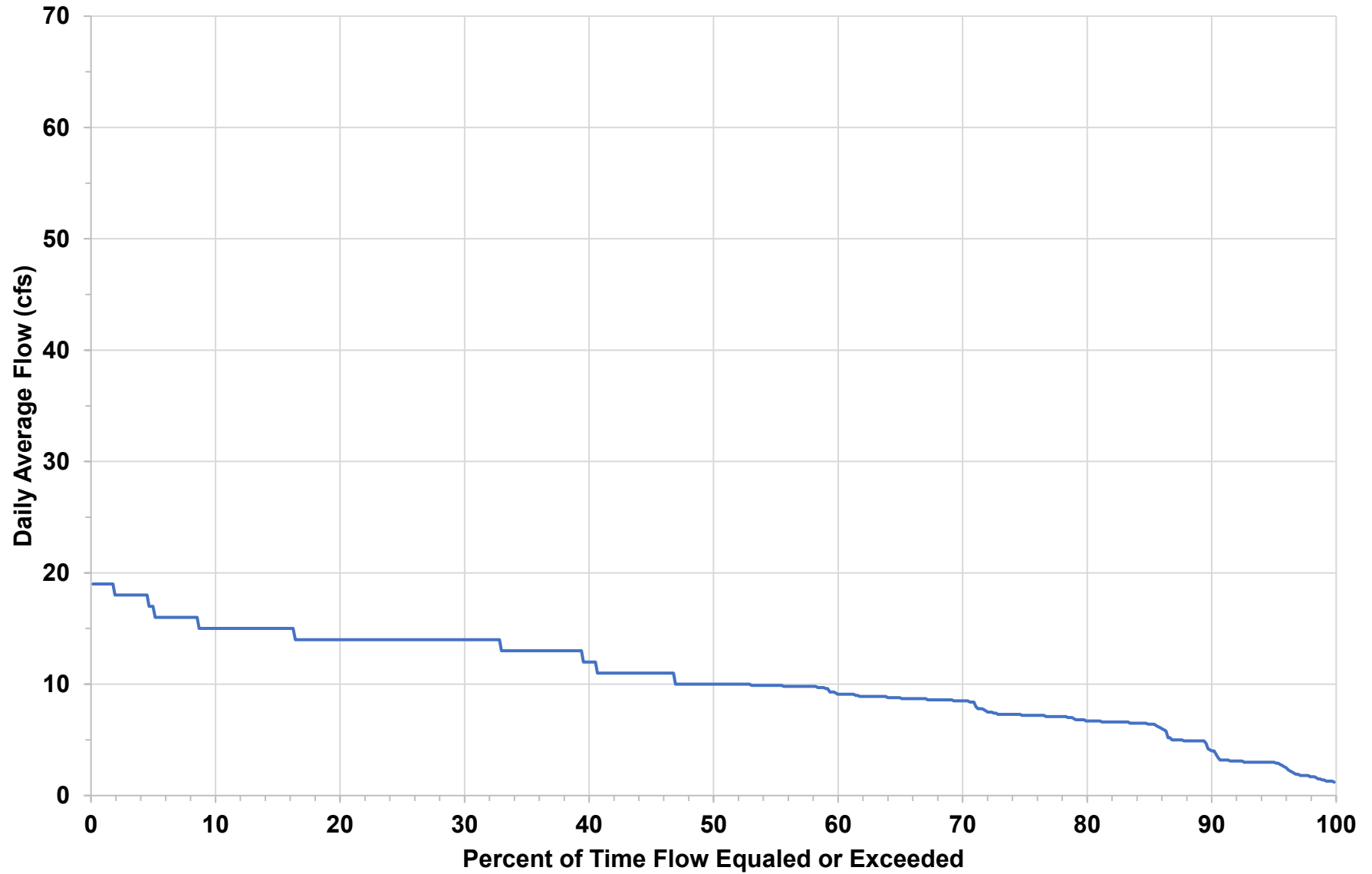
January Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

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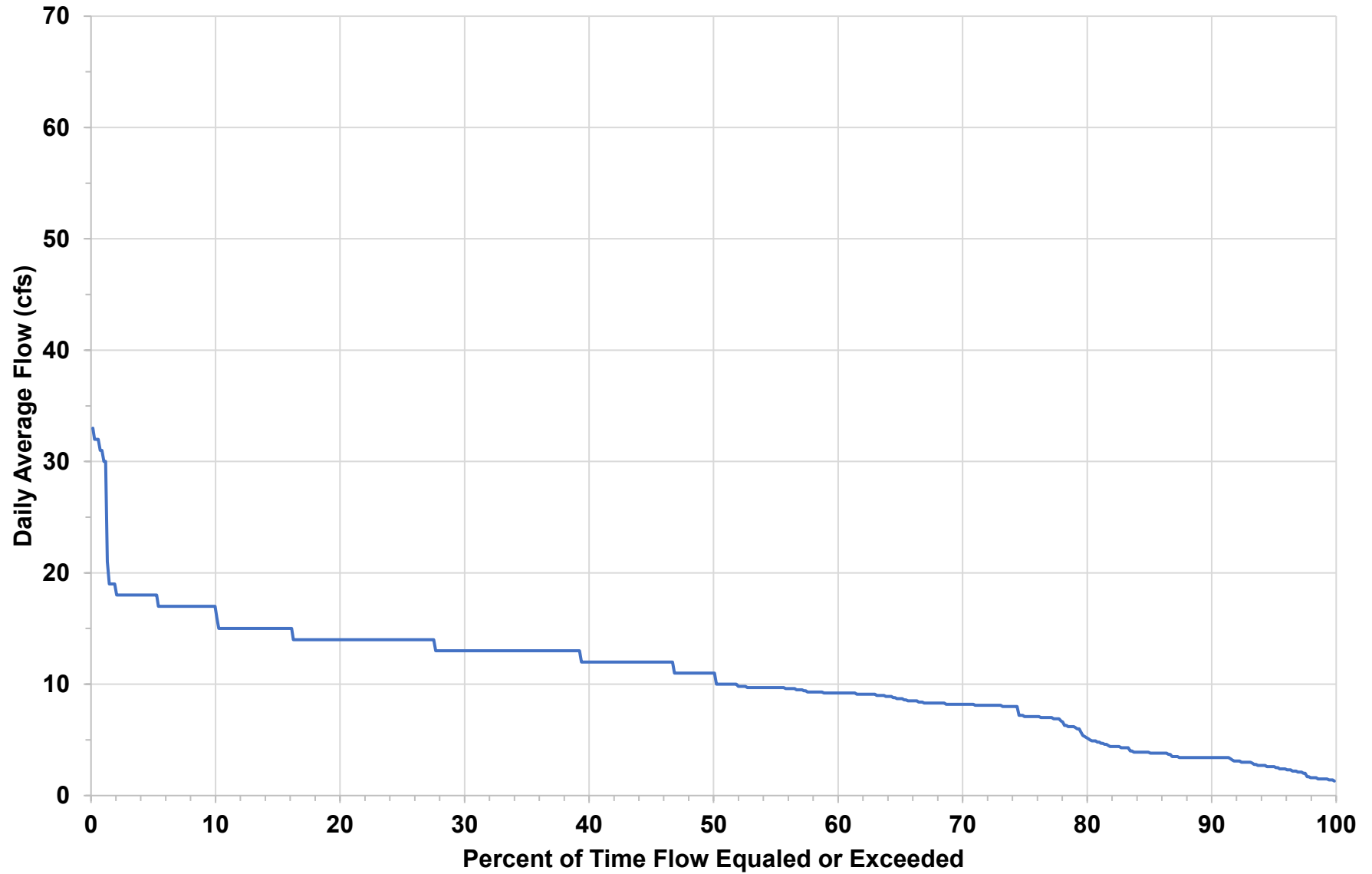
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February Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019



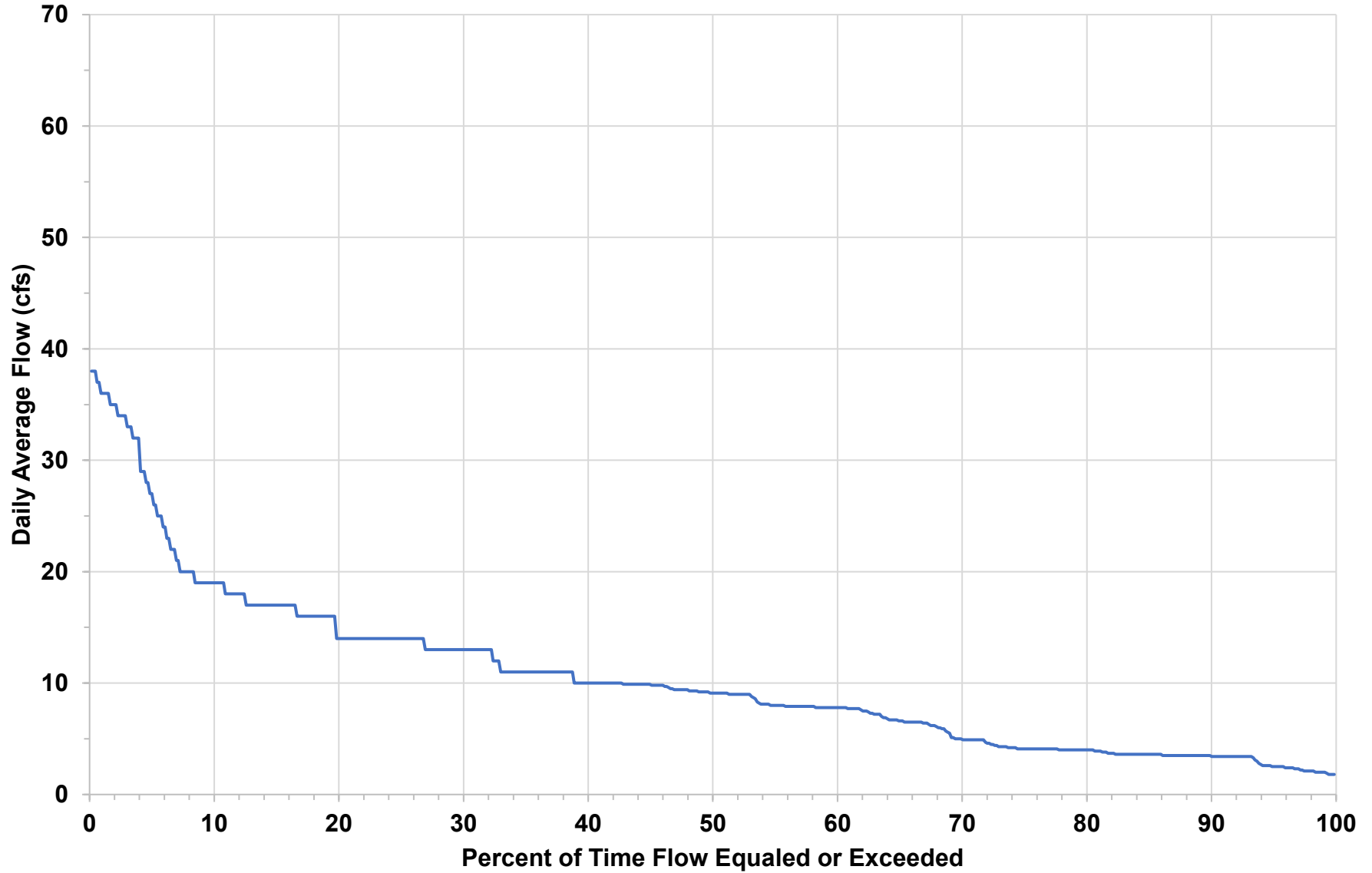
March Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
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Period of Record October 1, 1997 to September 30, 2019



April Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

USGS Gage No. 10287655

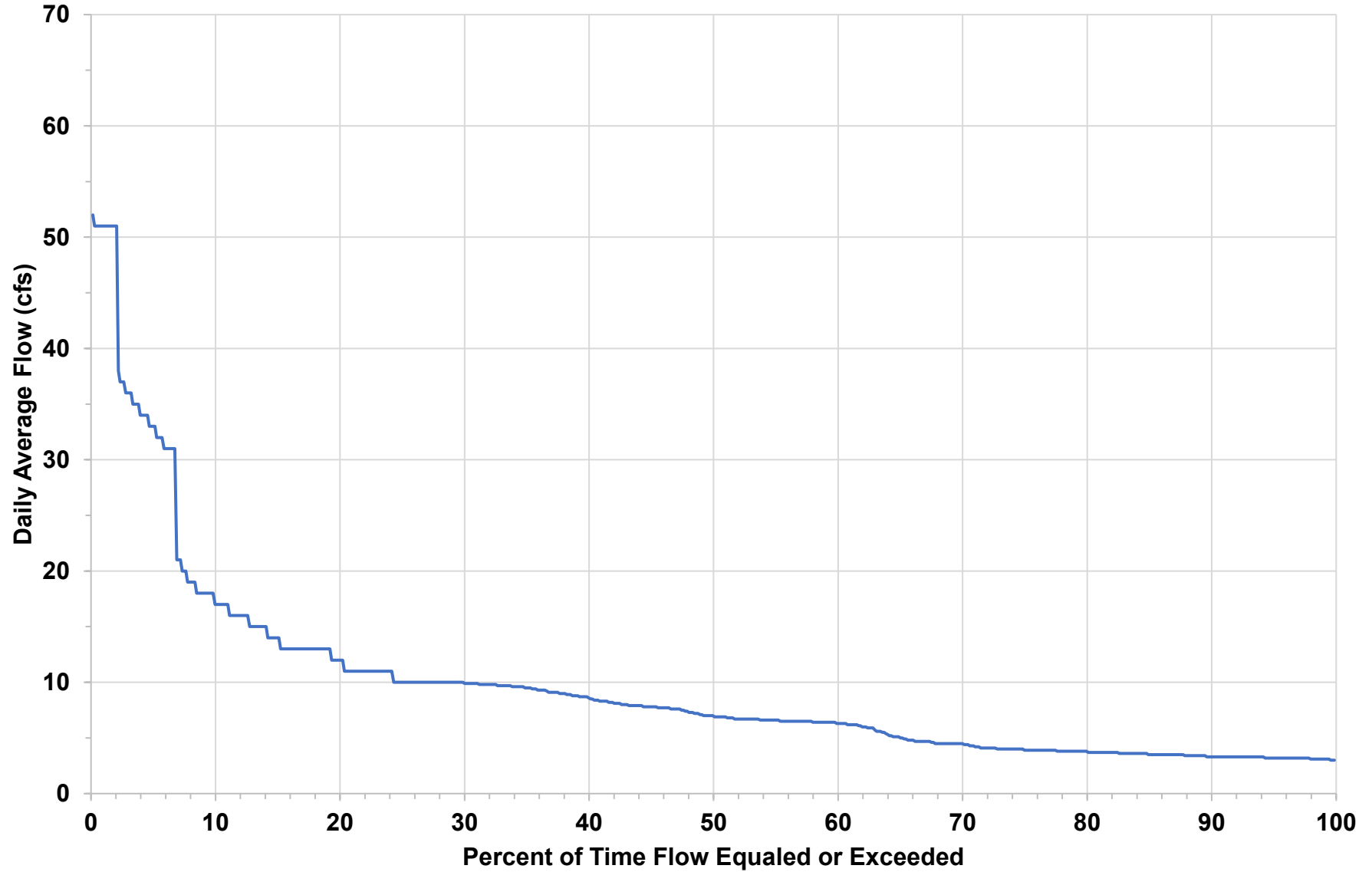
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May Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

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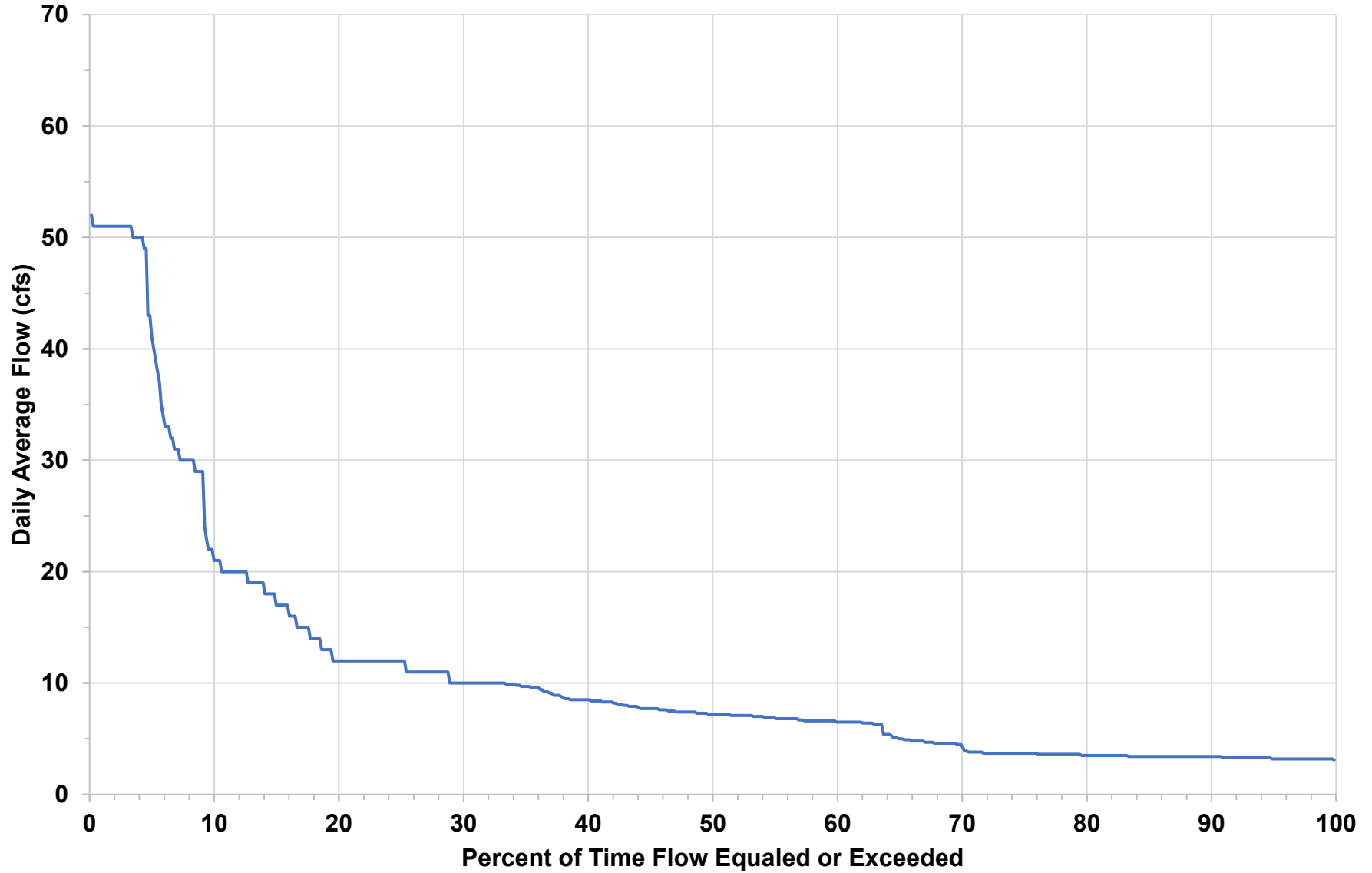
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June Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

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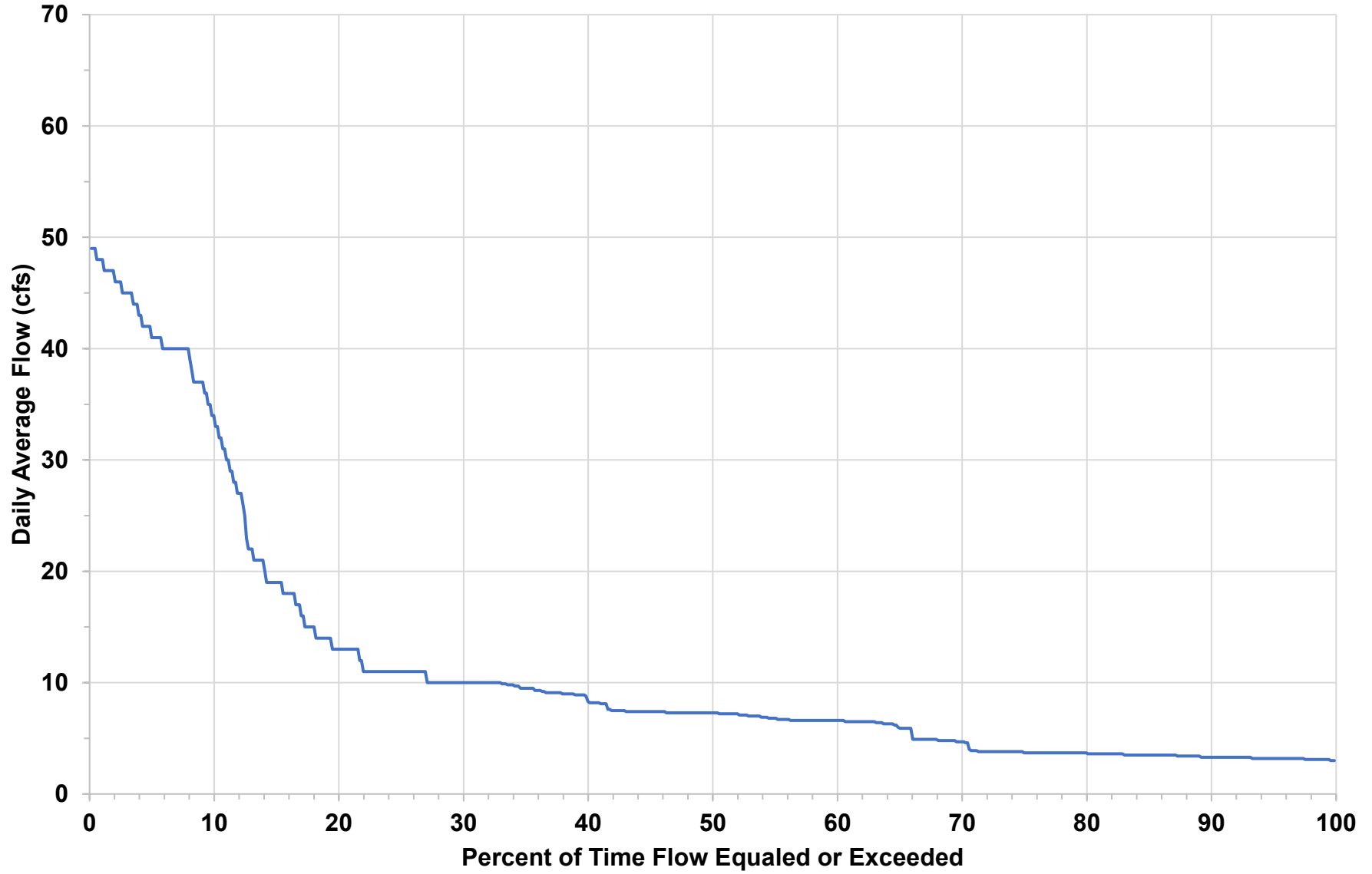
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July Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

USGS Gage No. 10287655

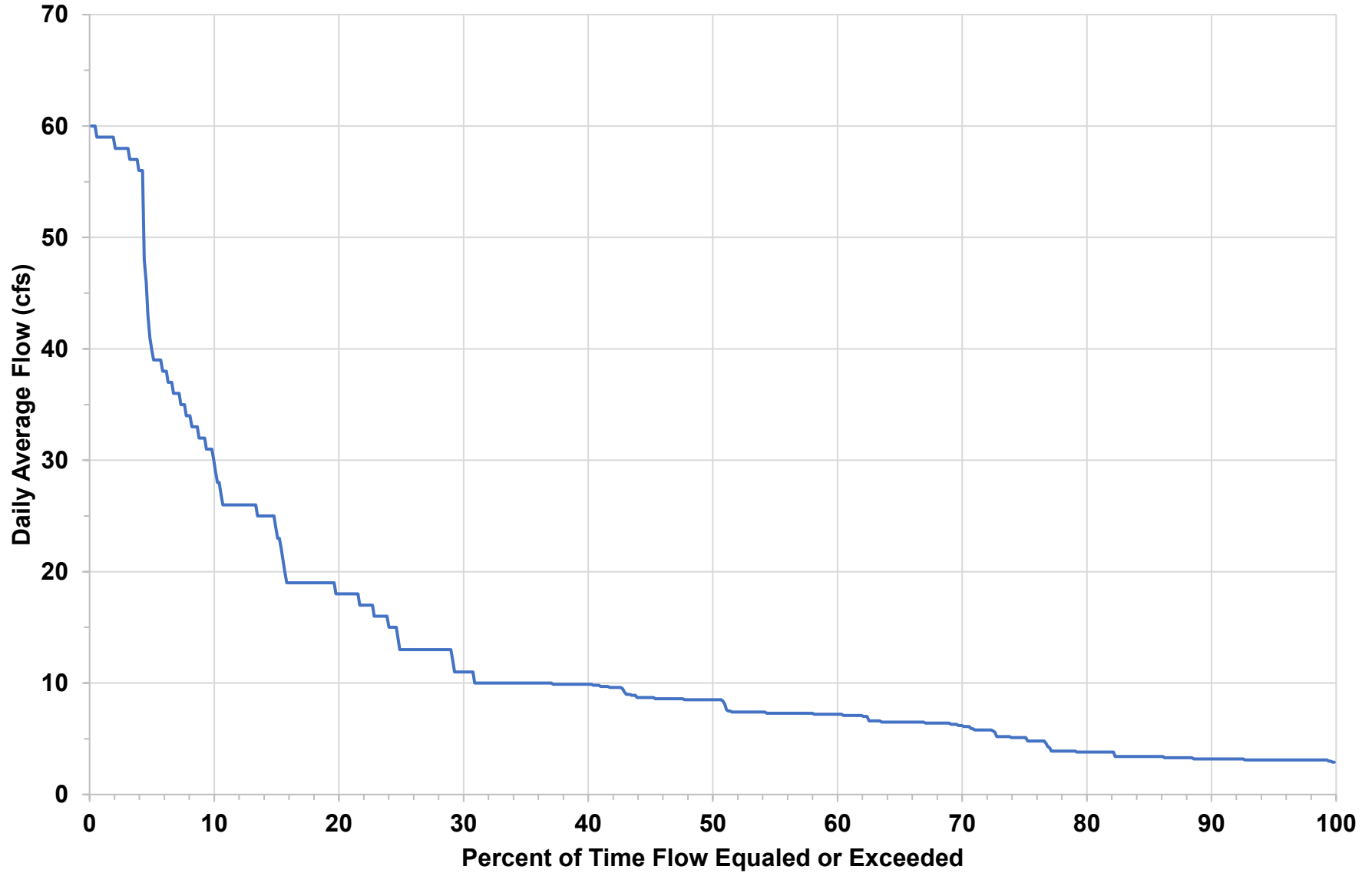
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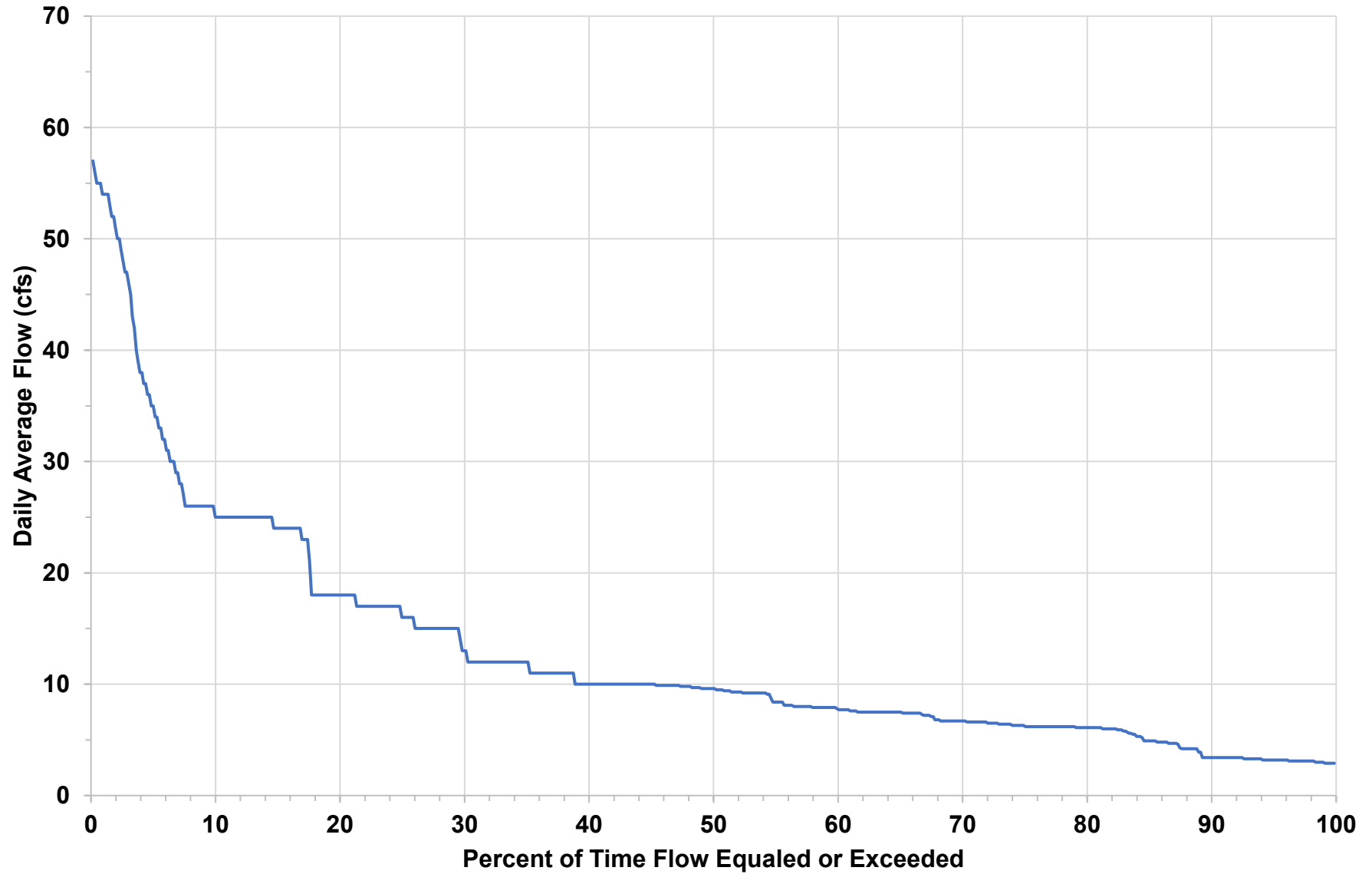
August Flow Duration Curve - Lee Vining Creek below Saddlebag Lake

USGS Gage No. 10287655

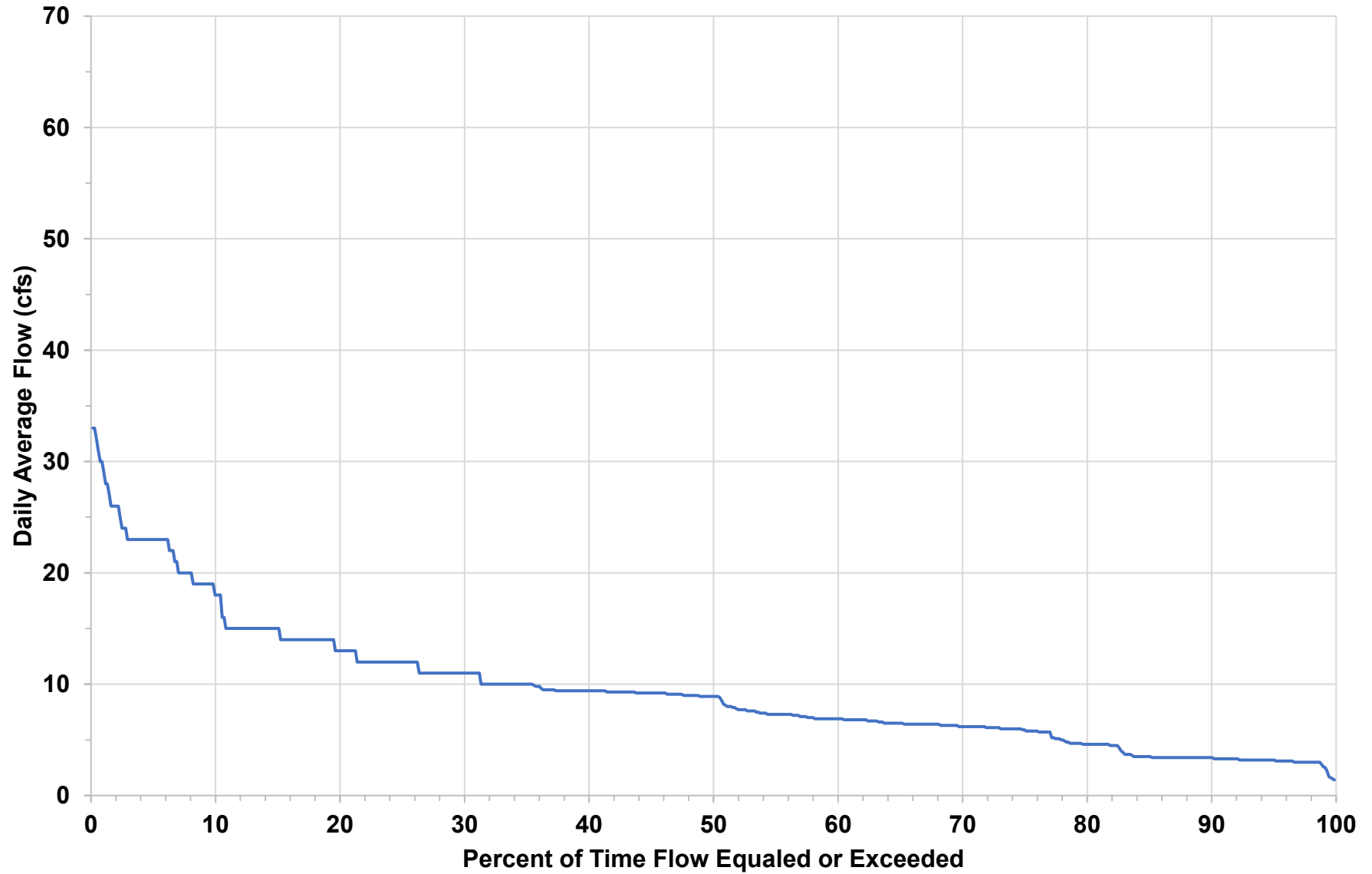
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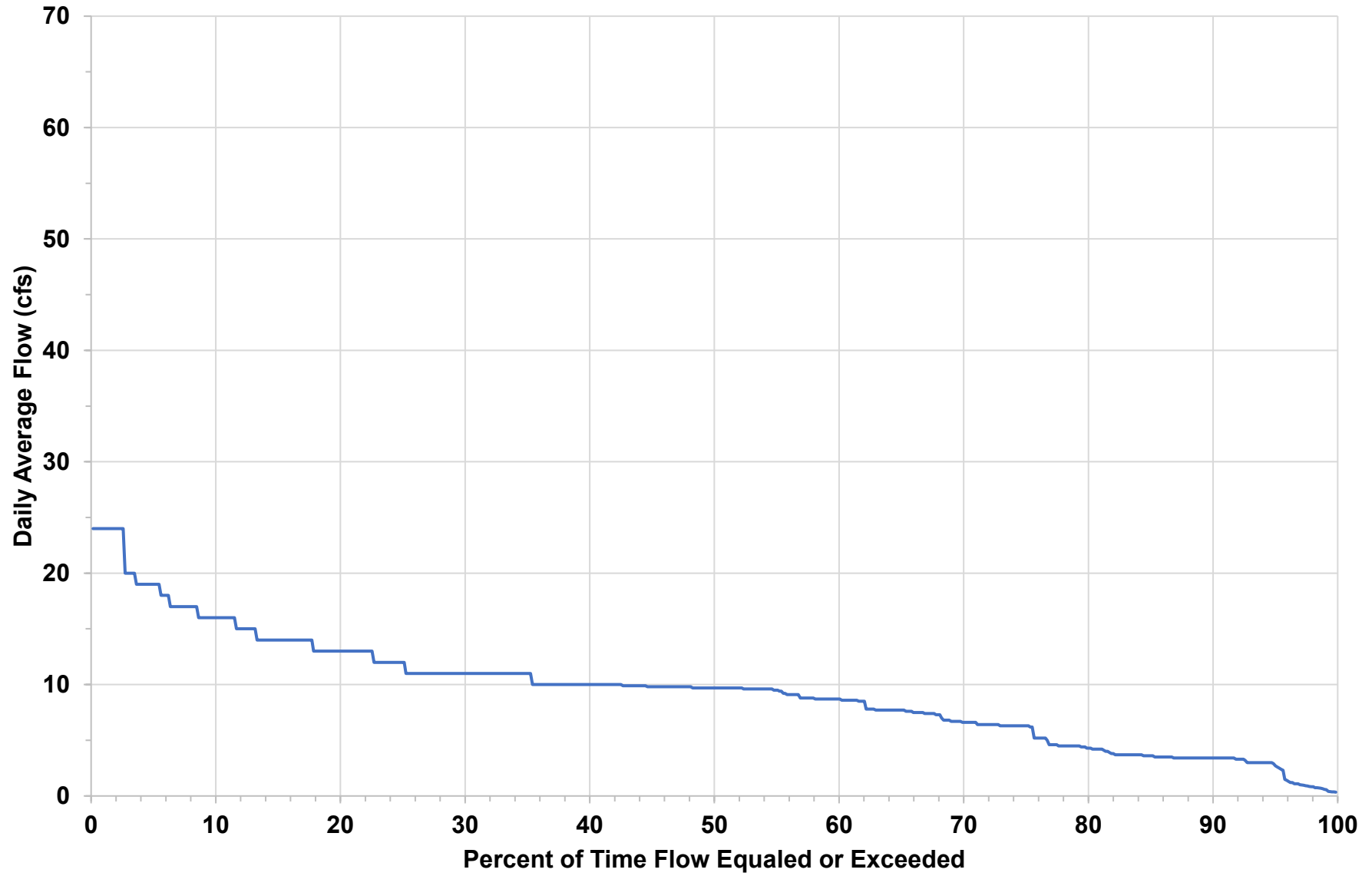
September Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019



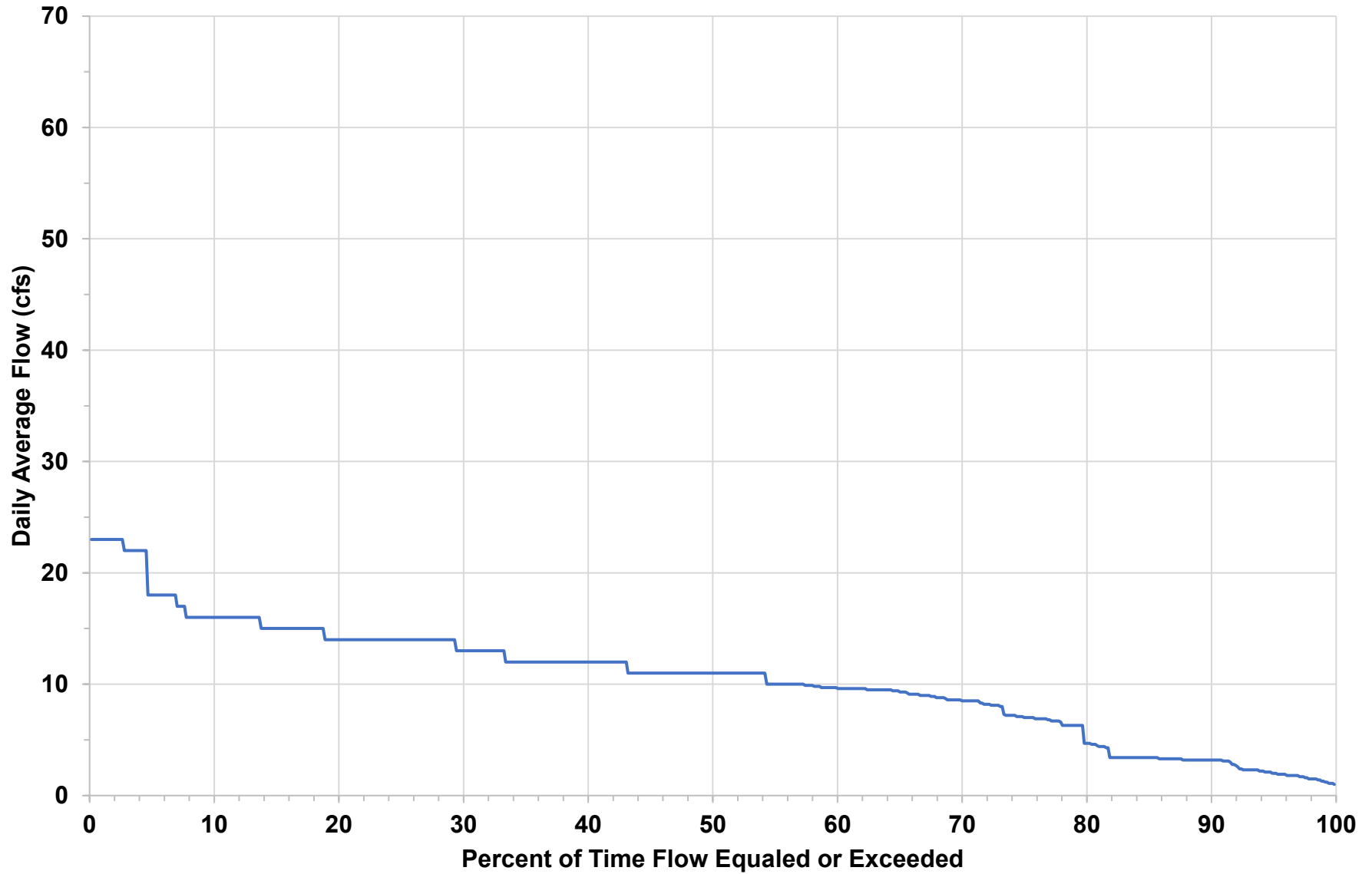
October Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019



November Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019



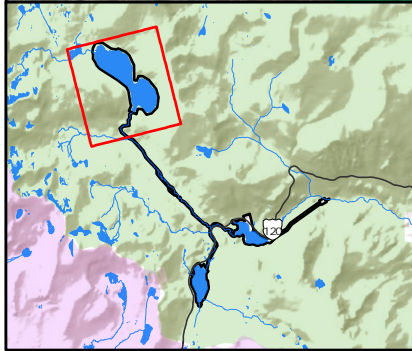
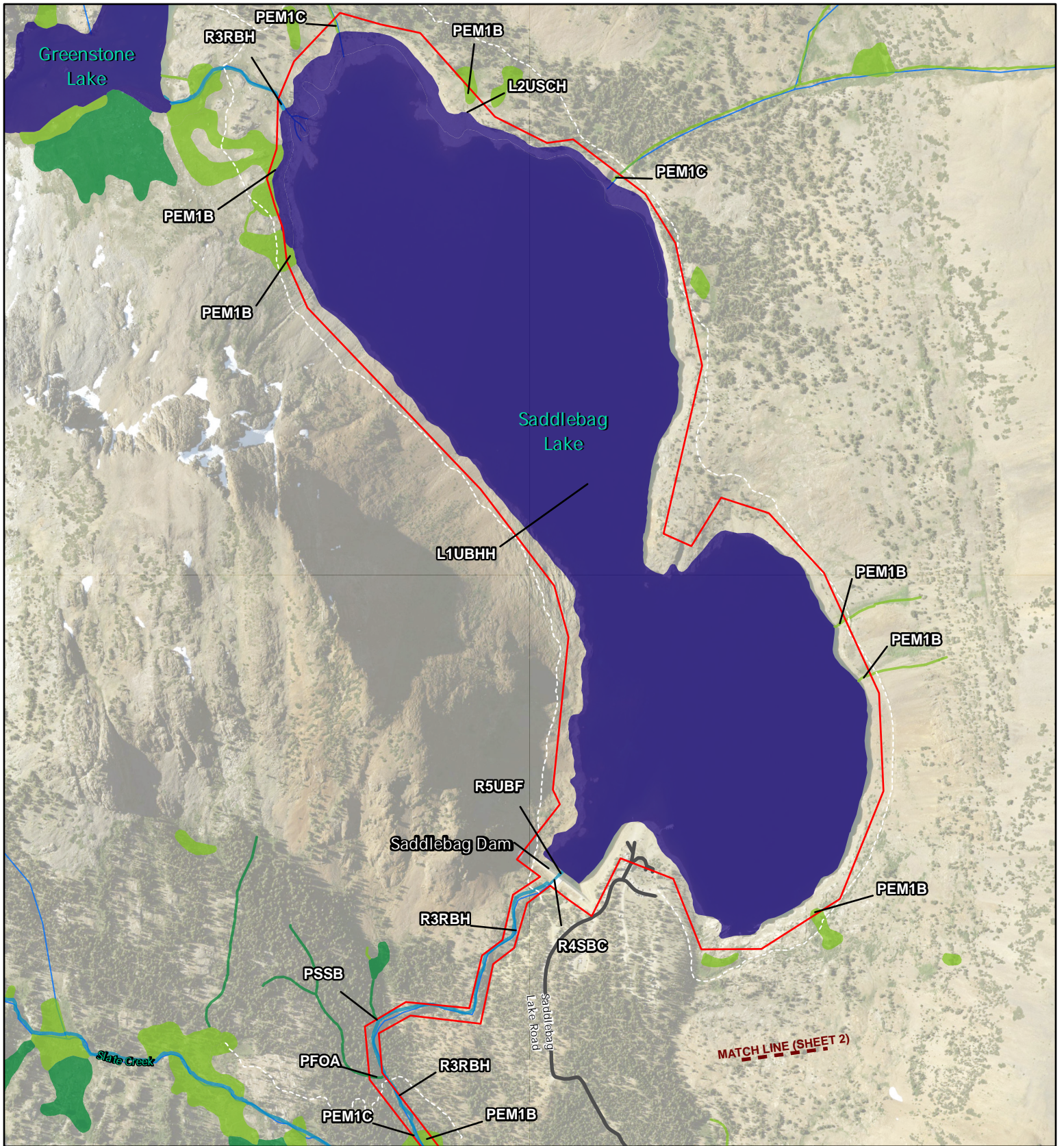
December Flow Duration Curve - Lee Vining Creek below Saddlebag Lake
USGS Gage No. 10287655
Period of Record October 1, 1997 to September 30, 2019












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APPENDIX G
NATIONAL WETLANDS INVENTORY MAPS

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	FERC Project Boundary (P-1388)
NWI Wetland Type	
	Estuarine and Marine Deepwater
	Estuarine and Marine Wetland
	Freshwater Emergent Wetland
	Freshwater Forested/Shrub Wetland
	Freshwater Pond
	Lake
	Riverine

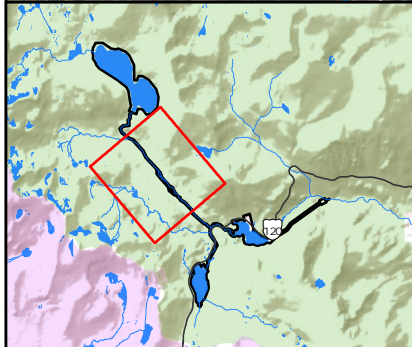
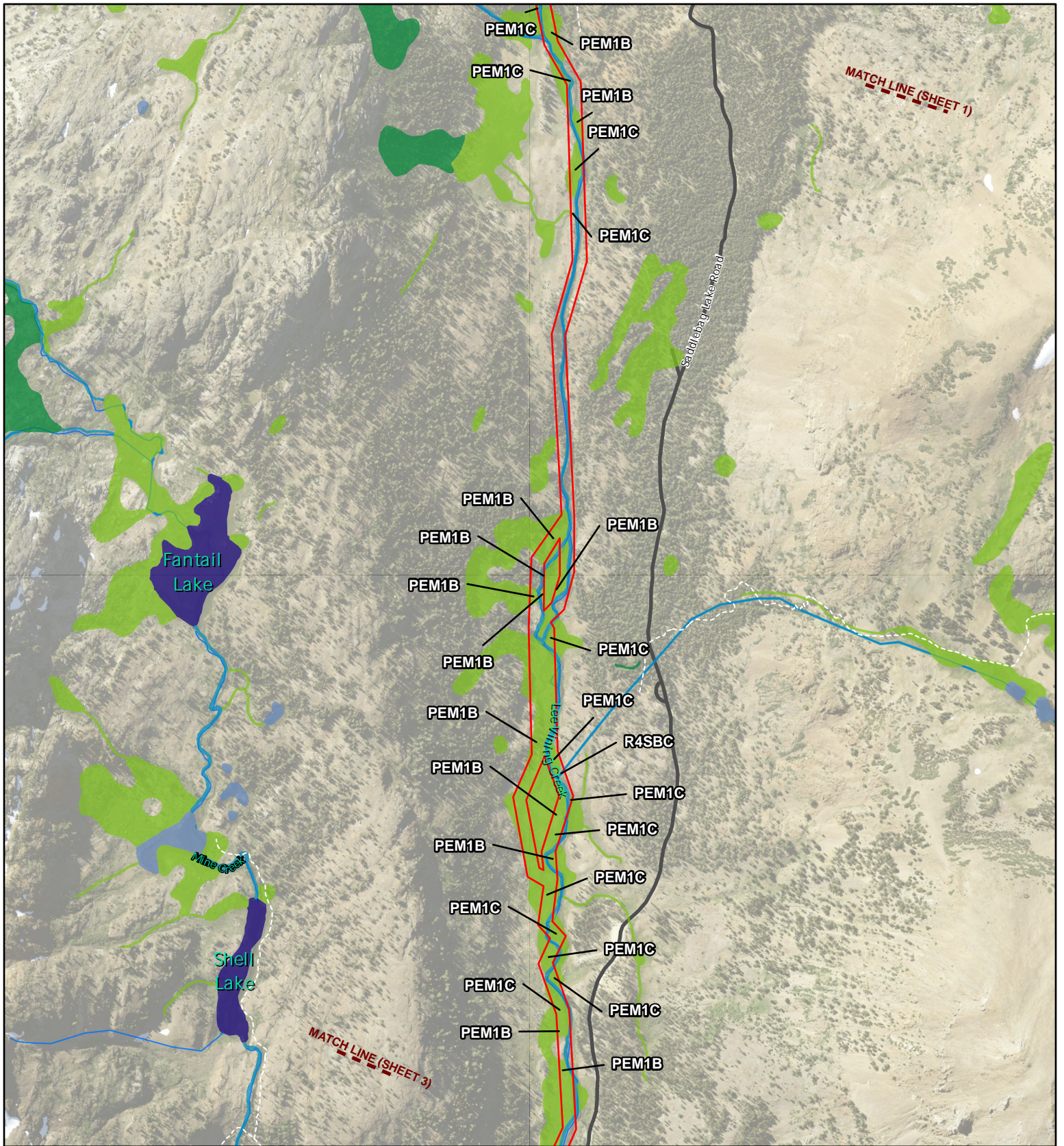
 SOUTHERN CALIFORNIA
EDISON[®]
Energy for What's AheadSM





Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983


0 500 1,000
Feet

National Wetlands
Inventory
Mapbook
Sheet 1 of 4


LEE VINING
HYDROELECTRIC PROJECT
FERC PROJECT NO. 1388



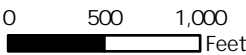
	FERC Project Boundary (P-1388)
NWI Wetland Type	
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	Estuarine and Marine Wetland
	Freshwater Emergent Wetland
	Freshwater Forested/Shrub Wetland
	Freshwater Pond
	Lake
	Riverine



**SOUTHERN CALIFORNIA
EDISON**
Energy for What's AheadSM

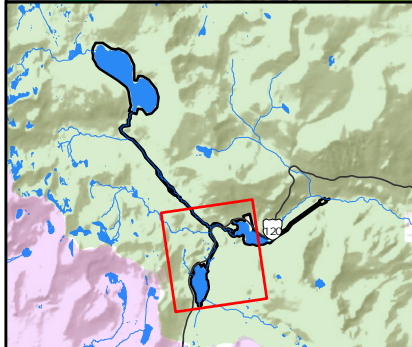
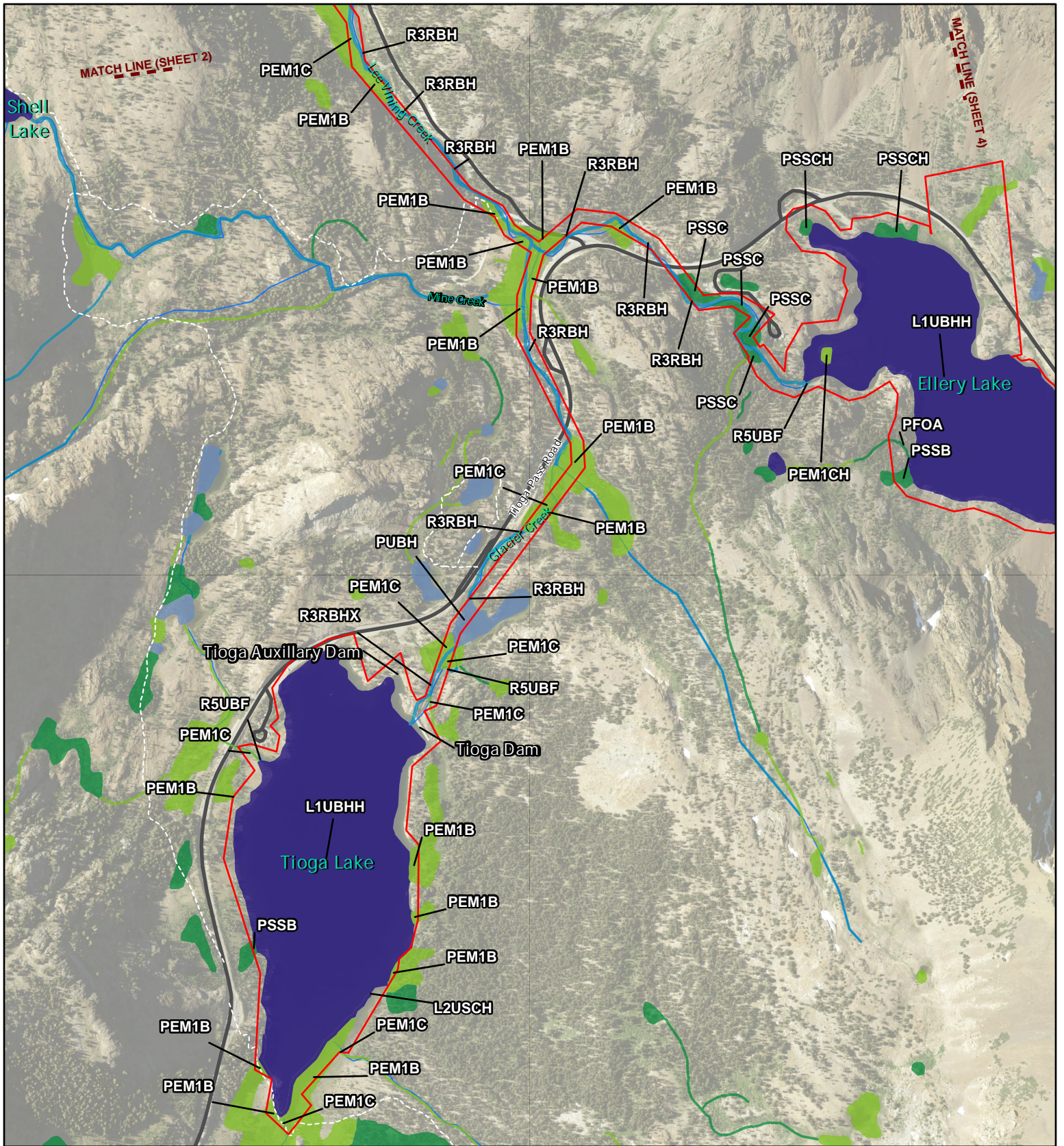




Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983




National Wetlands
Inventory
Mapbook
Sheet 2 of 4

LEE VINING
HYDROELECTRIC PROJECT
FERC PROJECT NO. 1388



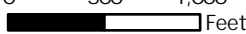
	FERC Project Boundary (P-1388)
NWI Wetland Type	
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	Estuarine and Marine Wetland
	Freshwater Emergent Wetland
	Freshwater Forested/Shrub Wetland
	Freshwater Pond
	Lake
	Riverine



**SOUTHERN CALIFORNIA
EDISON**
Energy for What's AheadSM

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
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 Datum: North American 1983

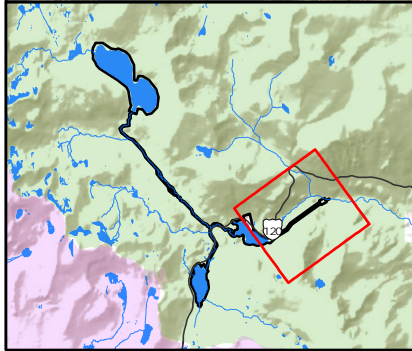
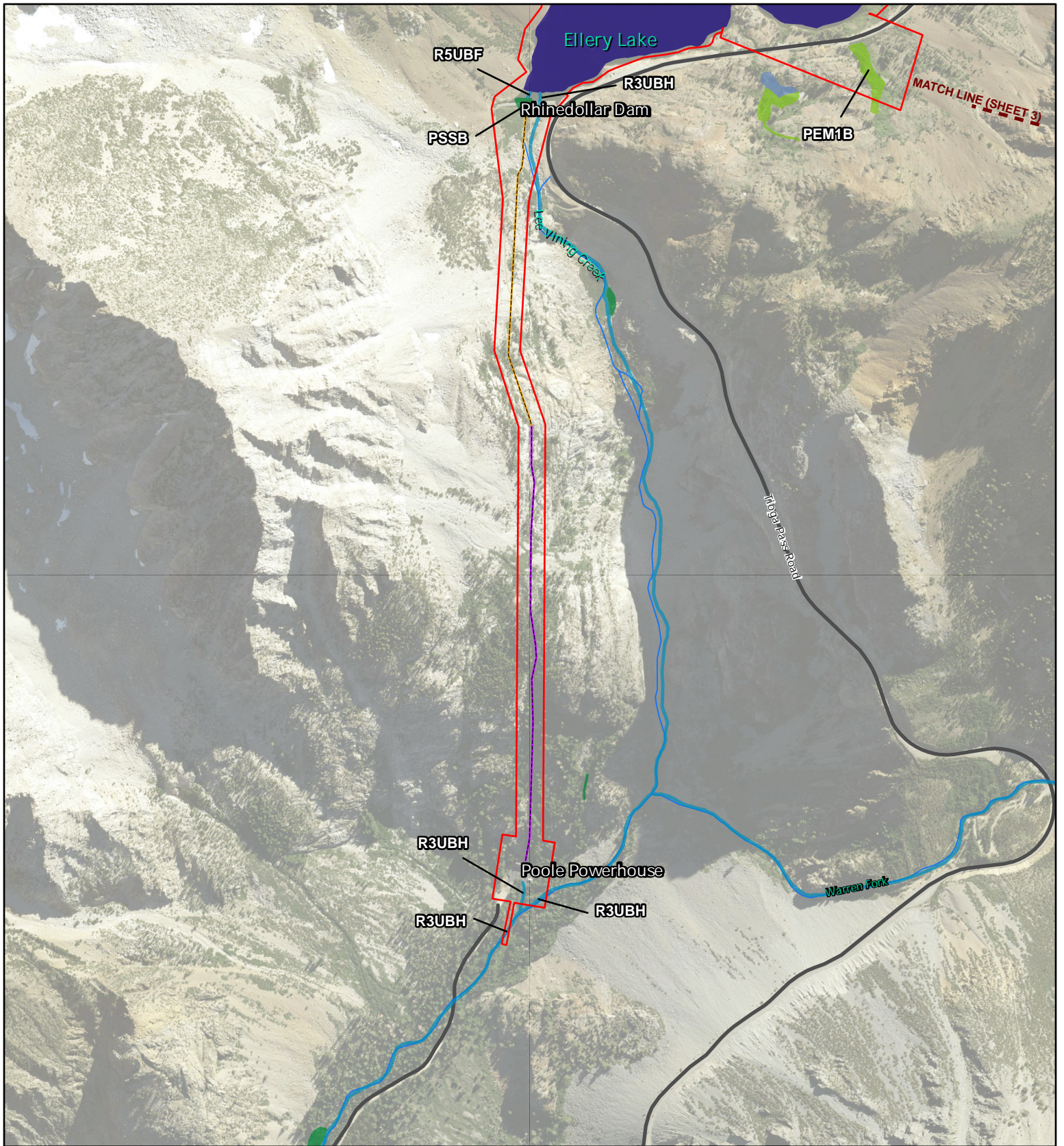
0 500 1,000

 Feet

National Wetlands
Inventory
Mapbook

Sheet 3 of 4


LEE VINING
HYDROELECTRIC PROJECT
FERC PROJECT NO. 1388



- Penstock
 - Tunnel
 - FERC Project Boundary (P-1388)

NWI Wetland Type

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine


SOUTHERN CALIFORNIA EDISON
 Energy for What's AheadSM

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983

0 500 1,000 Feet

National Wetlands Inventory Mapbook
 Sheet 4 of 4

LEE VINING HYDROELECTRIC PROJECT
 FERC PROJECT NO. 1388

**APPENDIX H
CULTURAL RESOURCES (CONFIDENTIAL)**

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