



Nevada Irrigation District Yuba-Bear Hydroelectric Project FERC Relicensing – Draft CEQA Supplemental Analysis

(Initial Study/Mitigated Negative
Declaration)

Nevada, Placer, and Sierra Counties, CA

June 2025



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NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE YUBA-BEAR HYDROELECTRIC PROJECT FERC RELICENSING

Nevada Irrigation District (NID) has prepared a California Environmental Quality Act (CEQA) Supplemental Analysis in an Initial Study/Mitigated Negative Declaration (IS/MND) format, to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of renewing the Yuba-Bear Hydroelectric Project (Proposed Project) – Federal Energy Regulatory Commission (FERC) Project No. 2266 under the Federal Power Act (FPA). This multi-purpose project provides flood control in the Middle Yuba, South Yuba, and Bear rivers; helps to meet NID water demands; improves recreation and enhances environmental resources in the Middle Yuba, South Yuba, and Bear rivers; and provides clean, renewable energy to California. NID owns and operates the Yuba-Bear Hydroelectric Project. NID proposes to renew the existing FERC license for hydropower facilities associated with the Yuba-Bear Project. The Proposed Project consists of acceptance and implementation of the new FERC license and continued operation and maintenance of the project pursuant to the terms and conditions contained in the new license.

The Draft CEQA Supplemental Analysis relies on the Final Environmental Impact Statement (FEIS) prepared by FERC in December 2014. The Draft CEQA Supplemental Analysis IS/MND found that implementation of the Proposed Project may result in potentially significant environmental impacts to: biological resources; geology and soils; recreation; and, tribal cultural resources. However, with the implementation of mitigation measures, any potentially significant environmental impacts of the Proposed Project would be reduced to less than significant levels as described in the Draft CEQA Supplemental Analysis IS/MND.

The Draft CEQA Supplemental Analysis IS/MND is being circulated for public review and comment for a 30-day period starting on June 17, 2025 through July 16, 2025. Comments on the Draft CEQA Supplemental Analysis IS/MND must be received in writing via e-mail or U.S. mail to the contact listed below by 5:00pm on July 16, 2025. For e-mailed comments, please include the project title in the subject line and include the commenter's name and U.S. Postal Service mailing address.

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During the 30-day public review period, the Draft CEQA Supplemental Analysis IS/MND will be available for review on the CEQAnet web portal at: <https://ceqanet.lci.ca.gov/> and on the NID webpage at: <https://www.nidwater.com/yuba-bear-project>.

Sincerely,

Jennifer Hanson
General Manager
Nevada Irrigation District

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Abbreviations

AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ac-ft	acre-feet
APE	area of potential effects
BLM	Bureau of Land Management
BMPs	best management practices
BO	Biological Opinion
CAL FIRE	California Department of Forestry and Fire Protection
CAPCOA	California Air Pollution Control Officers Association
CDFW	California Department of Fish and Wildlife
CDPs	census-designated places
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH ₄	methane
CO	Carbon Monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
dBA	A-weighted decibel
DEIS	Draft Environmental Impact Statement
DO	dissolved oxygen
DOC	Department of Conservation
DPR	State Department of Parks and Recreation
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
FS	Forest Service
FSS	Forest Service Sensitive
HPETP	Historic Properties Evaluation and Treatment Plan
HPMP	Historic Properties Management Plan
IVMP	Integrated Vegetation Management Plan
LOPs	Limited Operating Periods
LRMP	Land and Resource Management Plan
LUST	leaking underground storage tanks
LWD	large woody debris
MT	metric tons
MUN	Municipal and Domestic Supply
MW	megawatts
MYR	Middle Yuba River
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NID	Nevada Irrigation District

NOI	Notice of Intent
NO _x	nitrogen oxides
NRHP	National Register of Historic Places
NSAQMD	Northern Sierra Air Quality Management District
NTU	Nephelometric Turbidity Unit
NWPT	northwestern pond turtle
NYR	North Yuba River
PACs	Protected Activity Centers
PAOT	people at one time
PCAPCD	Placer County Air Pollution Control District
PG&E	Pacific Gas & Electric
PM&E	Protection, Mitigation, and Enhancement
PM ₁₀	respirable particulate matter
PM _{2.5}	fine particulate matter
Proposed Project	Yuba-Bear Hydroelectric Project
ROG	reactive organic gases
SHPO	State Historic Preservation Officer
SRMP	Sierra Resource Management Plan
SWRCB	State Water Resources Control Board
TCP	Traditional Cultural Properties
TCR	tribal cultural resource
TNF	Tahoe National Forest
UAIC	United Auburn Indian Community
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

Nevada Irrigation District (NID) has prepared this California Environmental Quality Act (CEQA) Supplemental Analysis to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of renewing the Yuba-Bear Hydroelectric Project (Proposed Project) – Federal Energy Regulatory Commission (FERC) Project No. 2266 under the Federal Power Act (FPA). This multi-purpose project provides flood control in the Middle Yuba, South Yuba, and Bear rivers; helps to meet NID water demands; improves recreation and enhances environmental resources in the Middle Yuba, South Yuba, and Bear rivers; and provides clean, renewable energy to California.

The Proposed Project is located in Placer, Nevada, and Sierra counties on the Middle Yuba River, Bear River, and their tributaries. The Proposed Project is described in detail throughout Section 2.0, *Project Description*, of this document. This document has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) of 1970 (Pub. Resources Code, § 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). This CEQA Supplemental Analysis relies on expert opinion, technical studies, and other evidence to substantiate its findings.

1.1 Purpose of this Document

NID owns and operates the Yuba-Bear Hydroelectric Project. NID's objective is to renew the existing FERC license for hydropower facilities associated with the Yuba-Bear Project. Acceptance and implementation of the new FERC license and continued operation and maintenance of the project pursuant to the terms and conditions contained in the new license is collectively referred to in this document as the Proposed Project.

Prior to undertaking a federal action, including issuance of a new license for continued operation and maintenance of the Yuba-Bear Hydroelectric Project, FERC must demonstrate compliance with the National Environmental Policy Act (NEPA) of 1969. In accordance with NEPA and FERC regulations (Title 18 Code of Federal Regulations Part 380), the FERC Office of Energy Projects reviewed the application for relicensing of the Yuba-Bear Hydroelectric Project and issued a draft environmental impact statement (DEIS) on May 17, 2013. This was followed by the issuance of a final environmental impact statement (FEIS) for the Project on December 19, 2014. The FEIS discusses four projects, Upper Drum Spaulding, Lower Drum, Deer Creek, and Yuba-Bear Hydroelectric projects. They are separate hydroelectric projects, and the Yuba-Bear Hydroelectric Project is the only focus of this Draft CEQA Supplemental Analysis.

FERC is the lead agency under NEPA through their completion of the FEIS. Accepting the hydroelectric project's new FERC license is a discretionary action undertaken by NID and has the potential to have physical effects on the environment. As such, NID's approval of the Proposed Project is subject to environmental review under the CEQA, Cal. Pub. Res. Code §§ 21000–21178. NID is the CEQA lead agency and has the principal responsibility for accepting and carrying out the new license, including the terms and conditions in the new license (CEQA Guidelines Section 15051). Furthermore, the California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board (SWRCB) are anticipated to act as Responsible and/or Trustee Agencies, as they may have discretionary permits/approvals that are required to support the Proposed Project. Specifically, CDFW may be requested to provide a permit that

would authorize the incidental “take” of State-protected species if deemed necessary for project implementation. Also, the SWRCB requires CEQA compliance to issue Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) for the Proposed Project.

CEQA requires that when a project requires both CEQA compliance and an environmental impact statement (EIS) prepared under NEPA, the lead agency shall, whenever possible, use the EIS in place of the project Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND; CEQA Guidelines Section 15225). CEQA Guidelines Section 15221 implements this requirement and provides that when a project will require compliance with both CEQA and NEPA, a California local agency should use the federal EIS rather than preparing a separate environmental report under CEQA if: 1) an EIS or Finding of No Significant Impact (FONSI) is prepared before an EIR or MND was completed; and 2) the EIS complies with the CEQA Guidelines. (See also Cal. Pub. Res. Code §§ 21083.5, 21083.7.) Because NEPA does not require a separate discussion of some issues required by CEQA, such as tribal cultural resources, those points of analysis, if missing from the EIS, must be added or supplemented before the EIS can be used to satisfy CEQA (see CEQA Guidelines Section 15221(b) for additional information). Therefore, this Draft CEQA Supplemental Analysis is being prepared in an Initial Study/ Mitigated Negative Declaration (IS/MND) format to add and supplement points of analysis not covered by the EIS for the Proposed Project, thereby making the EIS compliant with CEQA.

This Draft CEQA Supplemental Analysis IS/MND reflects a project-level evaluation of the proposed new license, including routine maintenance and ongoing operations, of the Proposed Project. As part of this new license, FERC has recommended a series of physical improvements, which would be defined and developed through plan development and feasibility studies during early license implementation. While plan development and feasibility studies do not in themselves generate environmental impacts, those plans would consider those environmental factors. Subsequent or supplemental CEQA analysis may be required once specific activities are defined in the plans and before those activities could be implemented.

During the relicensing process, NID collaborated with state and federal resource agencies, Native American Tribes, non-governmental organizations, and members of the public (collectively, the relicensing participants) to develop proposed new license conditions. The FERC Staff Alternative presented in the FEIS, in combination with resource agency terms and conditions (see [Section 2.3.4](#), Proposed Measures and Conditions in New FERC License), reflects the result of collaborative efforts between the licensee and the Proposed Project relicensing participants. The intent of this Draft CEQA Supplemental Analysis is to provide the public and decision-making agencies with information about the environmental impacts that could result from implementation of the Proposed Project.

The FERC FEIS is available on FERC’s eLibrary (<https://elibrary.ferc.gov/eLibrary/search>) under Yuba-Bear Hydroelectric Project Docket No. P-2266 at accession No. 20141219-4003, on the project website at <https://www.nidwater.com/yuba-bear-project>, and physical copies are available at NID’s place of business at 1036 W Main St., Grass Valley, California, 95945.

1.2 Organization of this Document

This CEQA Supplemental Analysis contains the following components:

- Chapter 1: Introduction - NEPA/CEQA background
- Chapter 2: Project Description – project location, existing facilities, and proposed facilities
- Chapter 3: Environmental Analysis - CEQA Appendix G resource areas
- Chapter 4: List of Preparers
- Chapter 5: References

1.3 Public Review Process

Public involvement is an essential aspect of the CEQA environmental review process. CEQA requires the disclosure of information about the Proposed Project to the public and agency decision-makers and seeks to foster public participation and informed decision making.

On June 26, 2024, NID distributed a Notice of Intent (NOI) to Rely on FERC's Final Environmental Impact Statement, in Combination with a Supplemental Analysis, to Satisfy CEQA for the Yuba-Bear Hydroelectric Project Relicensing, to the interested parties mailing list identified by FERC. Distribution of the NOI opened up a 30-day public comment period. The NOI identified locations where the document was available for public review, including online at CEQAnet, and invited interested parties to submit written comments. The 30-day public review and comment period concluded on July 25, 2024. All comments received during the public comment period have been considered by NID during preparation of this Draft CEQA Supplemental Analysis.

During the NOI public review period, seven comment letters were received. The comments were from CDFW, Yuba County Water Agency, Foothills Water Network, SWRCB, Advisory Council on Historic Preservation, Nevada County Clerk-Recorder, and Sierra County Planning & Building Department. The comments discussed similar topics and concerns, including biological resources mitigation measures, special-status species, water temperature and flows, the State Water Board's 401 Water Quality Certification, and cumulative impacts of the Proposed Project.

This Draft CEQA Supplemental Analysis is being circulated for a 30-day public review period to the California Office of Planning and Research State Clearinghouse for distribution to appropriate resource agencies and posting on CEQAnet. The Draft CEQA Supplemental Analysis will also be posted with the Placer, Nevada, and Sierra County Clerks.

2.0 PROJECT DESCRIPTION

A project is defined under CEQA as “the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect change in the environment” and that requires a discretionary approval from a public agency (Cal. Code Regs., tit.14, § 15278, subd. (a)(s)).

Existing and Proposed Project information pursuant to a new license is described below.

[Section 2.1](#) discusses the existing project’s location in the region. The principal existing Yuba-Bear Hydroelectric Project facilities are described in [Section 2.2.1](#), and planned modifications to these facilities, based on the FEIS and anticipated FERC license terms and conditions, are described in [Section 2.3.1](#). The existing FERC Project Boundary is discussed in [Section 2.2.2](#), while proposed modifications to the FERC Project Boundary are discussed in [Section 2.3.2](#). Existing operations and maintenance terms are discussed in [Section 2.2.3](#), and Proposed Project operations are discussed in [Section 2.3.3](#); terms and conditions for operations and maintenance that are expected to be included in the new Yuba-Bear Hydroelectric Project license are described in the FEIS and discussed in [Section 2.3.4](#) below.

The Proposed Project evaluated in this document is described in detail throughout [Section 2.3](#), *Description of Proposed Project under New FERC License*, and includes:

- Proposed facilities, including a new powerhouse (Rollins No. 2 Powerhouse), five new streamflow gages, and additions/updates to recreational facilities;
- Proposed modifications to the FERC project boundary;
- Proposed operations of new and increased minimum flow releases and modified ramping rates; and
- FERC-proposed mandatory modifications and additional conditions included in the issuance of a new license.

2.1 Project Location

The existing hydroelectric project is in northern California in Nevada, Placer, and Sierra counties along the western slope of the Sierra Nevada geomorphic provinces. A portion of the existing hydroelectric project is on United States land managed by the United States Department of Agriculture (USDA), Forest Service as part of the Tahoe National Forest (TNF), and a smaller portion on United States land administered by the United States Department of Interior, Bureau of Land Management (BLM) as part of the Sierra Resource Management Area.

The existing hydroelectric project ranges in elevation from French Lake at elevation 6,660 feet (ft) to Rollins Reservoir at elevation 2,171 ft. The existing hydroelectric project is located within three major river basins, the Middle Yuba River, South Yuba River, and Bear River (Figure 2.1-1). The existing hydroelectric project consists of four developments: (1) Bowman; (2) Dutch Flat; (3) Chicago Park; and (4) Rollins. These four developments include the following: 13 main dams, 4 water conduits, 4 powerhouses and associated switchyards; 1 transmission line; 17 campgrounds and associated boat launches, trails, and recreation facilities; and other appurtenant facilities and structures. The existing hydroelectric project generates an average of approximately 354 GWh of energy annually. Figure 2.1-1 shows the existing hydroelectric project in relation to other water bodies.

2.2 Existing Project

The existing hydroelectric project is defined as the existing Yuba-Bear Hydroelectric Project under its original 50-year hydropower license, which expired in 2013 and operates under an annual license. The original 50-year hydropower license seeking renewal was issued in 1963, and the following details the project history to the current renewal assessment in Table 2.2-1.

Table 2.2-1. Yuba-Bear Project History

Date	Project Event
May 1, 1963 – April 30, 2013	Original Yuba-Bear 50-year FERC hydropower license effective dates (issued on June 24, 1963)
April 11, 2008	PAD and NOI filed
May 22, 2008	FERC issues NEPA Scoping Document 1
September 25, 2008	FERC issues Scoping Document 2 NID files a Proposed Study Plan with FERC
January 23, 2009	NID files a Revised Study Plan with FERC
February 19, 2009	NID modifies its RSP based on written comments from February 8, 2009
September 17, 2009	NID files its first Biannual Study Report with FERC
March 17, 2010	NID files Initial Study Report (second Bi-Annual Study Report)
July 23, 2010	FERC issues modification to Study Plan Determination based on Initial Study Report process
September 17, 2010	NID files third Bi-Annual Study Report with FERC
November 3, 2010	NID files Draft License Application with FERC (beginning 90 day review and comment period)
March 17, 2011	NID files Updated Study Report (fourth Bi-Annual Study Report)
April 15, 2011	Final License Application filed
April 26, 2011	FERC issued a Notice of Application Tendered for Filing with the Commission and Establishing Procedural Schedule for Licensing and Deadline for Submission of Final Amendments
October 2011	Tech Memos developed
January 19, 2012	FERC issued a notice that NID had filed an application to relicense the Yuba-Bear Hydroelectric Project and solicited protests and notices of intervention. Intervention requests were filed by 1) Forest Service; 2) BLM; 3) NPS; 4) USFWS; 5) NMFS; 6) SWRCB; 7) CDFW; 8) Placer County Water Agency (PCWA); 9) Yuba County Water Agency; 10) Placer County; 11) PG&E; and 12) various NGO groups and members of the public. FERC issued notice stating the FLA is ready for environmental analysis and requested conditions and recommendations
May 17, 2013	DEIS published
April 10, 2014	Forest Service submitted its Final Section 4(e) Conditions for the Yuba-Bear Hydroelectric Project in accordance with 18 CFR 4.34(b)(1)(i). The BLM filed its final Section 4(e) Conditions for the Yuba-Bear Hydroelectric Project on April 14, 2014.
December 19, 2014	FEIS published
June 26, 2024	NOI and NOA issued

2.2.1 Existing Facilities

The existing hydroelectric project's developments include Bowman (3.6-MW installed capacity), Dutch Flat No. 2 (24.6-MW installed capacity), Chicago Park (39.0 MW installed capacity), and Rollins (12.2-MW installed capacity). Among these four developments, there are 13 main dams; 11 reservoirs or impoundments; four major water conduits; four powerhouses with associated switchyards with a combined authorized installed capacity of 79.32 MW; one 9-mile-long, 60-kilovolt transmission line; and appurtenant facilities and structures, including recreation facilities. The FERC-jurisdictional facilities that comprise each of the developments are shown in Figure 2.2-1 through Figure 2.2-3 and are described in more detail below.

Figure 2.2-1. Yuba-Bear Hydroelectric Project Facilities

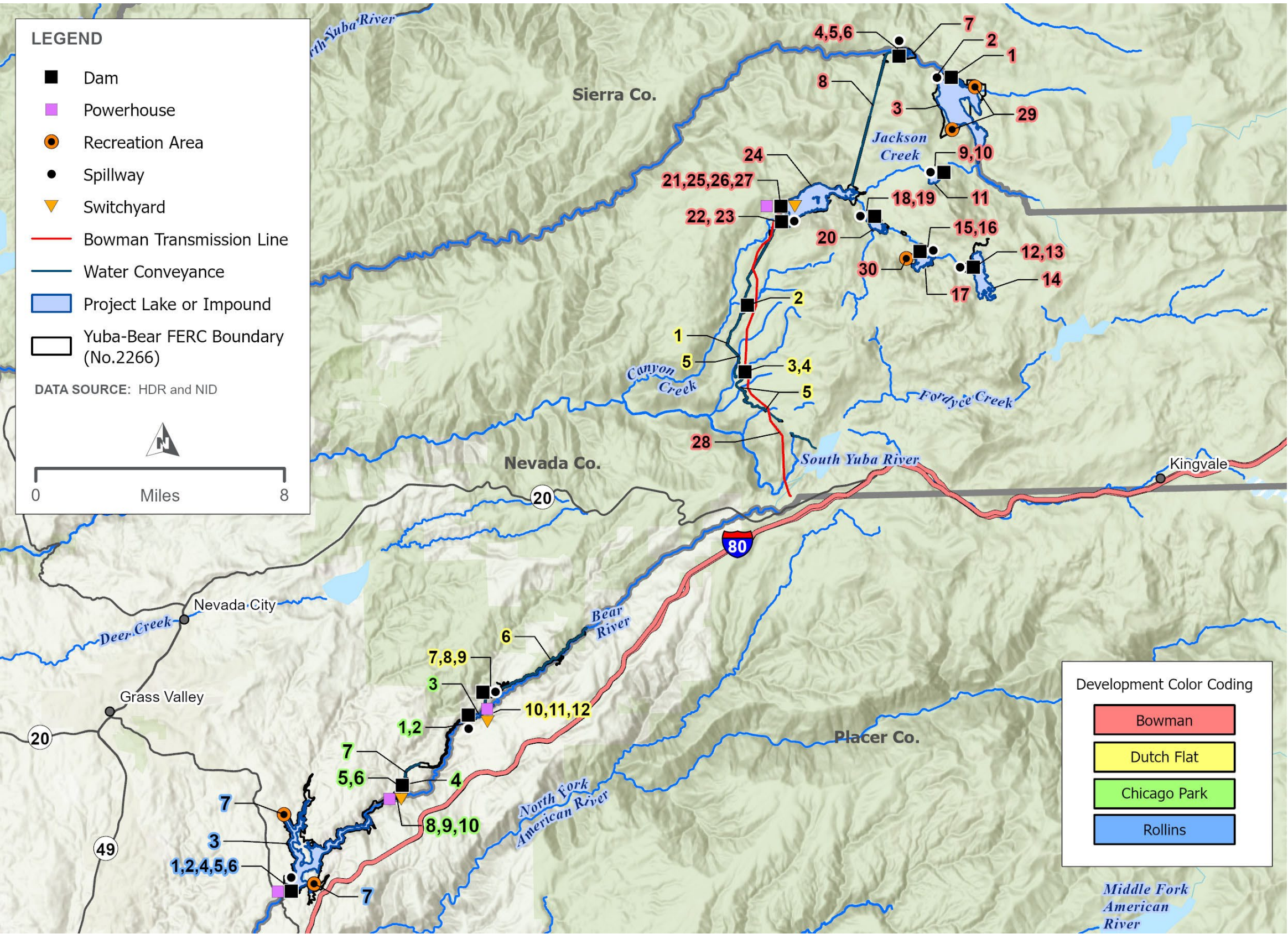


Figure 2.2-2. Yuba-Bear Hydroelectric Facilities: Yuba River Development

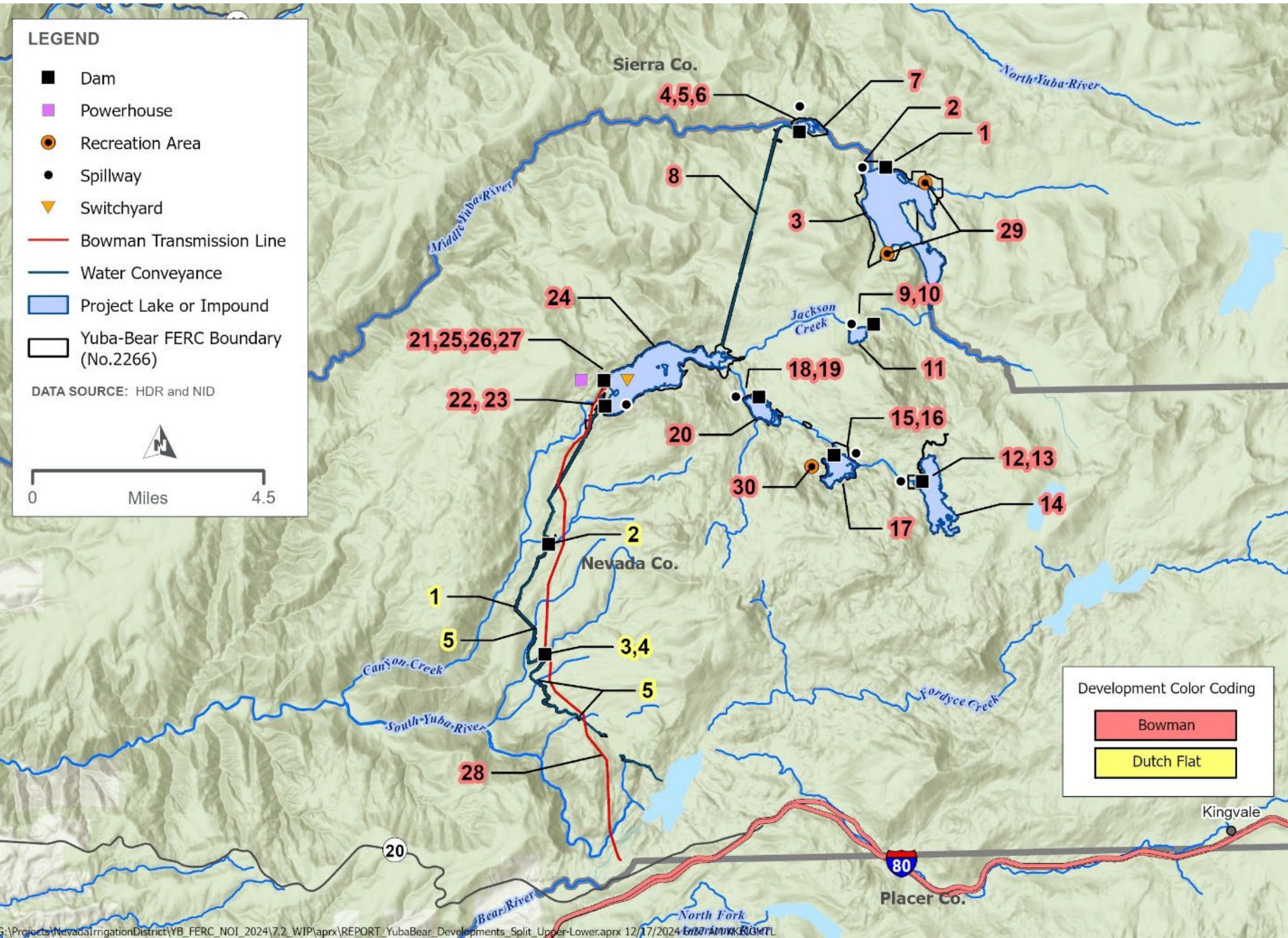
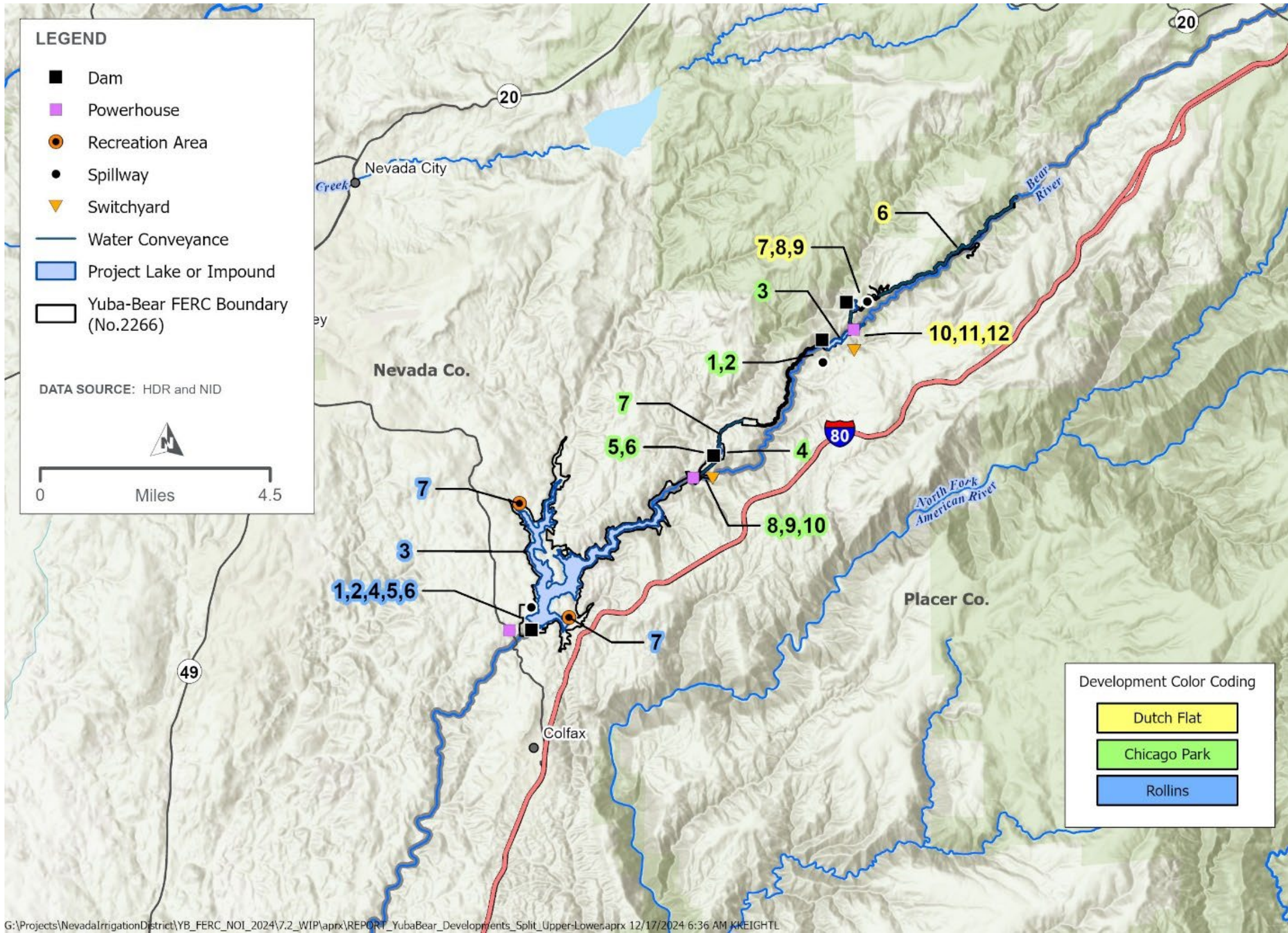


Figure 2.2-3. Yuba-Bear Hydroelectric Facilities: Bear River Development



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Bowman Development

The Bowman Development is composed of Jackson Meadows reservoir, dam, and spillway; Milton Main dam and spillway, Milton South dam, and Milton reservoir; Milton-Bowman diversion conduit; Wilson Creek diversion dam; Jackson Lake, dam, and spillway; French Lake, and French dam and spillway; Faucherie Lake, dam, and spillway; Sawmill Lake, dam, and spillway; Bowman Lake; Bowman North dam; Bowman South dam and spillway; Bowman penstock; Bowman powerhouse; and Bowman transmission line. The locations of the facilities within the Bowman Development are shown on Figure 2.2-2 and in more detail on Figure 2.2-3, which correspond to the numbered descriptions below.

- (1) Jackson Meadows Dam, a zoned embankment structure with a core, filter zones, and rockfill shells located on the Middle Yuba River (MYR) 45.6 miles upstream of its confluence with the North Yuba River (NYR). The dam is 195 feet high with a crest length of 1,530 feet and a crest elevation of 6,044.5 feet², and a drainage area of 37.40 square miles. The dam includes two low-level outlets (El. 5,933.0 ft) with a combined maximum design capacity of about 760 cubic feet per second (cfs) at full pool;
- (2) Jackson Meadows Dam Spillway, a three-bay, gated spillway composed of reinforced concrete. The ogee crest elevation of the spillway is 6,021 feet. A reinforced concrete chute carries spillway flow about 200 feet past the gates and discharges into a rock-lined channel. The maximum design capacity of the spillway is 40,000 cfs at zero freeboard;
- (3) Jackson Meadows Reservoir, a constructed storage reservoir on the MYR formed by Jackson Meadows Dam. At normal maximum water surface elevation (6,036.0 ft), Jackson Meadows Reservoir extends about 2.9 miles upstream, has an estimated usable storage capacity of 69,205 acre-feet (ac-ft), a surface area of 1,054 acres, and a shoreline of about 9.9 miles;
- (4) Milton Main (Diversion) Dam, a concrete arch dam located on the MYR about 42.2 miles upstream of its confluence with the North Yuba River (NYR). The dam is 37 feet high with a crest elevation of 5,690.0 feet, and a drainage area of 39.77 square miles. The dam includes one low-level outlet (El. 5,663.0 ft) with a maximum design capacity of about 113 cfs at full pool and one 8-inch valve for minimum instream releases with a capacity of 5 cfs.
- (5) Milton South (Diversion) Dam, a concrete arch dam located on the MYR about 42.2 miles upstream of its confluence with the NYR. The dam is 30 feet high with a crest elevation of 5,696.0 feet;
- (6) Milton Diversion Dam Spillway, the main concrete arch dam acts as an ungated, uncontrolled spillway with a maximum design capacity of 40,000 cfs;
- (7) Milton Diversion Impoundment, a constructed impoundment on the MYR formed by Milton Diversion Dam. At normal maximum water surface elevation (5,690.0 ft), Milton Reservoir extends 0.5-mile upstream, has a usable storage capacity of 295 ac-ft, a surface area of 103 acres, and a shoreline of about 1.3 miles;
- (8) Milton-Bowman Diversion Conduit, composed of both pipeline (a 3,315 ft-long, 84 inch-diameter, concrete pipeline) and tunnel (22,623 feet-long, 7.5 foot by 9.5 foot tunnel) sections carrying water from Milton Reservoir to Bowman Reservoir;

(9) Jackson Dam, a homogeneous, compacted earth fill dam located on Jackson Creek, about 2.9 miles upstream of Bowman Lake on Jackson Creek. The dam is 28 feet high with a crest length of 772 feet and a crest elevation of 6,596.0 feet, and a drainage area of 0.65 square mile. The dam includes one low-level outlet (El. 6,570.0 ft) with a maximum design capacity of about 59 cfs at full pool;

(10) Jackson Dam Spillway, a 50-foot-long, uncontrolled, sharp-crested weir with rubble masonry training walls at a crest elevation of approximately 6,592 feet. The maximum design capacity of the spillway is 1,200 cfs;

(11) Jackson Lake, a constructed storage reservoir formed by Jackson Dam on Jackson Creek. At normal maximum water surface elevation (6,592 ft), Jackson Lake extends 0.3-mile upstream, has a usable storage capacity of 1,330 ac-ft, a surface area of 58 acres, and a shoreline of about 1.1 miles;

(12) French Dam, a rockfill dam with reinforced gunite and shotcrete on Canyon Creek, 1.3 miles upstream of Faucherie Lake. The dam is 70 feet high with a crest length of approximately 200 feet and a crest elevation of 6,665.5 feet, and a drainage area of 4.6 square miles. The dam includes one low-level outlet (El. 6,598.5 ft) with a maximum design capacity of about 657 cfs at full pool;

(13) French Dam Spillway, an uncontrolled weir wall constructed of reinforced concrete. The crest of the spillway is 6,660 feet. A 100-foot-long unlined rock channel carries spillway flow into the river channel. The maximum design capacity of the spillway is 4,300 cfs;

(14) French Lake, a constructed storage reservoir on Canyon Creek formed by French Dam. At normal maximum water surface elevation (6,660.00 ft), French Lake Reservoir extends 1.3 miles upstream, has a usable storage capacity of 13,940 ac-ft, a surface area of 356 acres, and a shoreline of about 5.3 miles;

(15) Faucherie Dam, a zoned embankment dam on Canyon Creek with sloping core and filter zones and riprap reinforcement, 1.5 miles upstream of Sawmill Lake. The dam is 65 feet high with a crest length of approximately 665 feet and a crest elevation of 6,131.0 feet, and a drainage area of 8.97 square miles. The dam includes two low-level outlets (El. 6,082.3 ft) with a combined maximum design capacity of about 289 cfs at full pool;

(16) Faucherie Dam Spillway, an uncontrolled, 3 foot high sharp-crested concrete weir directing spillway discharge into an unlined rock channel that returns discharge to the creek downstream. The spillway is 150 feet long with a crest elevation of approximately 6,123 feet. The maximum design capacity of the spillway is 10,000 cfs;

(17) Faucherie Lake, a constructed storage reservoir on Canyon Creek formed by Faucherie Dam. At normal maximum water surface elevation (6,123.0 ft), Faucherie Lake extends 0.4-mile upstream, has a usable storage capacity of 3,980 ac-ft, a surface area of approximately 143 acres, and a shoreline of about 2.4 miles;

(18) Sawmill Dam, a rockfill dam on Canyon Creek, 0.8-mile upstream of Bowman Lake. The dam is 60 feet high with a crest length of approximately 384 feet and a crest elevation of 5,865.0 feet, and a drainage area of 16.4 square miles. The dam includes one low-level outlet with a maximum design capacity of about 160 cfs at full pool;

(19) Sawmill Dam Spillway, an uncontrolled, flat slab and buttress that direct spillway discharge into an unlined rock channel that returns discharge to the creek downstream. The spillway is 230 feet long with a crest elevation of approximately 5,860.0 feet. The maximum design capacity of the spillway is 14,500 cfs at zero freeboard;

(20) Sawmill Lake, a constructed storage reservoir on Canyon Creek formed by Sawmill Dam. At normal maximum water surface elevation (5,860.0 ft), Sawmill Lake extends 0.7-mile upstream, has a usable storage capacity of 3,030 ac-ft, a surface area of approximately 79.4 acres, and a shoreline of about 2.6 miles;

(21) Bowman North Dam, a concrete-faced rockfill dam located on Canyon Creek, 10.3 miles upstream of its confluence with the SYR. The dam is 175 feet high with a crest length of approximately 700 feet and a crest elevation of 5,567.0 feet, and a drainage area of 27.1 square miles. The dam includes three low-level outlets (El. 5,400 ft) with a combined maximum design capacity of about 1,077 cfs at full pool;

(22) Bowman South Dam, a constant radius arch dam constructed in nine monoliths, located on Canyon Creek. The dam is 135 feet high with a crest length of approximately 400 feet and a crest elevation of 5,563.6 feet;

(23) Bowman South Dam Spillway, a reinforced concrete flat slab and buttress structure with 12 bays, 5 of which permit uncontrolled overflow and 7 of which are fitted with radial gates. The spillway is 175 feet long with a crest elevation of 5,563.6 feet for the 5 uncontrolled bays (85 feet in length) and 5,557.17 feet for the seven bays (90 feet in length) controlled by radial gates (144 inches wide by 70 inches high). The maximum design capacity of the combined spillway structures is 4,000 cfs at elevation 5,563 feet. In addition, the Bowman South Dam acts as an ungated, uncontrolled spillway with a maximum design capacity of 20,000 cfs;

(24) Bowman Lake, a constructed storage reservoir on Canyon Creek formed by Bowman North and South dams. At normal maximum water surface elevation (5,562.0 ft), Bowman Lake extends 2.5 miles upstream, has a usable storage capacity of 68,510 ac-ft, a surface area of approximately 820 acres, and a shoreline of about 7.6 miles;

(25) Bowman Penstock, a submerged, concrete encased, 60-inch-diameter penstock that diverts a maximum of 350 cfs to Bowman Powerhouse;

(26) Bowman Powerhouse, an above-ground, indoor powerhouse constructed of reinforced concrete located near the base of Bowman North Dam, adjacent to Canyon Creek. The powerhouse consists of one horizontal Francis turbine with a nameplate rated capacity of 3.6 MW at a head of 135 feet and a flow of 313 cfs;

(27) Bowman Switchyard, located adjacent to Bowman Powerhouse;

(28) Bowman Transmission Line, an above-ground, 9.0-mile-long, 60 kV transmission line that connects the Bowman Powerhouse Switchyard to PG&E's Drum-Spaulding 60 kV line approximately 1.5 miles west of PG&E's Spaulding No. 1 Powerhouse, which is part of PG&E's Drum-Spaulding Project (FERC Project No. 2310);

(29) Jackson Meadows Reservoir Recreation Area, a recreation area that includes Findley Campground with 14 campsites, East Meadows Campground with 46 campsites, Fir Top Campground with 12 campsites Pass Creek Campground with 30 campsites, Woodcamp

Campground with 20 campsites, Aspen Group Campground with a capacity for 100 people at one time (PAOT), Silvertip Group Campground with a capacity for 50 people at one time (PAOT), and Jackson Point boat in campground with 10 sites.

(30) Faucherie Lake Recreation Area, a recreation area that includes Faucherie Group Campground with a capacity of 25 people at one time (PAOT), and a day use area; and

(31) all appurtenant facilities and features.

Dutch Flat Development

The Dutch Flat Development is composed of Bowman-Spaulding conduit diversion dam; Bowman-Spaulding conduit; Texas Creek diversion dam; Fall Creek diversion dam and flume; Clear Creek, Trap Creek, and Rucker Creek diversions; Dutch Flat No. 2 conduit; Dutch Flat dam, spillway, and forebay; and Dutch Flat No. 2 powerhouse and penstock. The locations of the facilities within the Dutch Flat Development are shown on Figure 2.2-1 and in more detail on Figure 2.2-2 and Figure 2.2-3, which correspond to the numbered descriptions below.

(1) Bowman-Spaulding Conduit which diverts flows from Canyon Creek below Bowman Lake to Fuller Lake and Lake Spaulding (part of PG&E's Drum-Spaulding Project No. 2310) via 40,501 feet of canals and flumes and 16,192 feet of tunnels. Flow is diverted by the Bowman Spaulding Diversion Dam through a 12-foot-wide radial head gate into the conduit. The diversion dam has a 30-inch-diameter corrugated iron pipe controlled by a 30 inch-diameter slide gate used as a low-level outlet. Maximum design capacity of the conduit at the head gate is 300 cfs but increases to 325 cfs at its terminus into Fuller Lake;

(2) Texas Creek Diversion Dam, a concrete reinforced diversion dam on Texas Creek, 0.6-mile upstream of its confluence with Canyon Creek, which diverts a portion of flow into the Bowman-Spaulding Conduit. The dam has a drainage area of 4.6 square miles, is 10 feet tall with a crest length of 50 feet and a crest elevation of 5,385.75 feet;

(3) Fall Creek Diversion Dam, a concrete reinforced diversion dam on Fall Creek, 1.2 miles downstream of its confluence with Lake Creek, which diverts a portion of flow into the Bowman-Spaulding Conduit. The dam has a drainage area of 5.81 square miles, is 5.5 feet tall with a crest length of 74.5 feet and a crest elevation of 5,368.68 feet;

(4) Fall Creek Diversion Flume, a 98-foot-long, 6-foot-4 inch-diameter steel flume that diverts water from Fall Creek Diversion Dam to the Bowman-Spaulding Conduit. Maximum design capacity of the flume is 100 cfs;

(5) Other Bowman-Spaulding Conduit Diversions, including (in descending order) Clear Creek, Trap Creek, and Rucker Creek Diversions, each of which divert their entire streamflow. These diversions take place as each creek flows over the upstream wall or section into the Bowman-Spaulding Conduit. Dump gates (style and dimensions vary by diversion) are located in the downstream wall opposite the diversion which can carry flow into the downstream channel;

(6) Dutch Flat No. 2 Conduit, a 24,728-foot-long combination of tunnel, flume, siphon, and canal that diverts water from Drum Afterbay (part of PG&E's Drum-Spaulding Project No. 2310) to Dutch Flat No. 2 Forebay at a maximum design capacity of 610 cfs;

(7) Dutch Flat Forebay Dam, a zoned earthfill embankment dam located off-stream, adjacent to the Bear River, 0.4 mile north of Dutch Flat Afterbay. The dam is 77 feet high with a crest length of 440 feet and a crest elevation of 3,336.0 feet, and a drainage area of 0.1 square mile;

(8) Dutch Flat Forebay Dam Spillway, an uncontrolled, concrete spillway 250 feet in length and a crest elevation of 3,331.75 feet. Discharge is routed through two 60 inch-diameter metal pipes down to a tributary of the Bear River. The maximum design capacity of the spillway is 5,000 cfs;

(9) Dutch Flat Forebay, an off-stream, constructed, re-regulating reservoir adjacent the Bear River formed by Dutch Flat Forebay Dam. At normal maximum water surface elevation (3,331.6 feet), Dutch Flat Forebay has a usable storage capacity of 185 ac-ft, a surface area of 8 acres, and a shoreline of about 0.5-mile;

(10) Dutch Flat No. 2 Powerhouse Penstock, a 2,100 foot-long, 8 foot-diameter, steel penstock that diverts water, at a maximum design capacity of approximately 610 cfs, from Dutch Flat Forebay to Dutch Flat No. 2 Powerhouse;

(11) Dutch Flat No. 2 Powerhouse, an above-ground, outdoor powerhouse constructed of reinforced concrete and located adjacent to Dutch Flat Afterbay, part of the Bear River. The powerhouse consists of one vertical axis Francis turbine with a nameplate rated capacity of 24.57 MW at a head of 581 feet and a flow of 600 cfs;

(12) Dutch Flat No. 2 Powerhouse Switchyard, located adjacent to the Dutch Flat No. 2 Powerhouse; and

(13) all appurtenant facilities and features.

Chicago Park Development

The Chicago Park Development is composed of Dutch Flat afterbay dam, spillway, and afterbay and Chicago Park conduit, forebay dam, spillway, forebay, penstock, and powerhouse. The locations of the facilities within the Chicago Park Development are shown on Figure 2.2-1 and in more detail on Figure 2.2-2 and Figure 2.2-3, which correspond to the numbered descriptions below.

(1) Dutch Flat Afterbay Dam, a zoned embankment dam with rockfill shells located on the Bear River 6 miles upstream of its confluence with Rollins Reservoir. The dam is 165 feet high with a crest length of 495 feet and a crest elevation of 2,755.0 feet, and a drainage area of 21.5 square miles;

(2) Dutch Flat Afterbay Dam Spillway, an uncontrolled, concrete-lined spillway 100 feet in length with a crest elevation of 2,741 feet. Discharge goes over an ogee crest and down a 405-foot-long concrete chute that discharges into the Bear River. The maximum design capacity of the spillway is 20,000 cfs;

(3) Dutch Flat Afterbay, a constructed re-regulating reservoir located on the Bear River formed by Dutch Flat Afterbay Dam. At normal maximum water surface elevation (2,741.0 ft), Dutch Flat Afterbay Reservoir extends about 0.9-mile upstream, has a usable storage capacity of 2,037 ac-ft, a surface area of 140 acres, and a shoreline of about 1.9 miles. The dam includes two low-level outlets (El. 2,640.0 ft) with a combined maximum design capacity of about 760 cfs at full pool;

(4) Chicago Park Conduit, which diverts water from Dutch Flat Afterbay Dam to Chicago Park Forebay via 21,700 feet of concrete flume (18 feet wide by 10 feet deep) and gunite-lined ditch (14-38 feet wide and 10 feet deep). Maximum design capacity of the conduit is 1,100 cfs;

(5) Chicago Park Forebay Dam, an earthfill dam with gunite face located off-stream, adjacent to the Bear River approximately 0.3-mile east of the confluence of the Bear River and Steephollow Creek. The dam is 35 feet high with a crest length of 200 feet and a crest elevation of 2,720.0 feet, and no associated drainage area;

(6) Chicago Park Forebay Dam Spillway, an uncontrolled side channel spillway 63 feet in length, with a crest elevation of 2,717.4 feet, located on the Chicago Park Conduit 0.5-mile above the Chicago Park Powerhouse Penstock intake Structure. The maximum design capacity of the spillway is 1,100 cfs;

(7) Chicago Park Forebay, a constructed re-regulating reservoir located adjacent to the Bear River formed by Chicago Park Forebay Dam. At normal maximum water surface elevation (2,717.3 ft), Chicago Park Forebay Reservoir has a usable storage capacity of 117 ac-ft, a surface area of 7 acres, and a shoreline of about 0.7-mile;

(8) Chicago Park Powerhouse Penstock, an approximately 2,250-foot-long, 9.2-10.0 foot-diameter steel penstock that diverts water, at a maximum design capacity of approximately 1,070 cfs, from Chicago Park Forebay to Chicago Park Powerhouse;

(9) Chicago Park Powerhouse, an above-ground, indoor powerhouse constructed of concrete and located adjacent the Bear River, approximately 800 feet southeast of the confluence of the Bear River and Steephollow Creek. The powerhouse consists of one vertical axis Francis turbine with a nameplate rated capacity of 39 MW at a head of 480 feet and a maximum flow of 1,100 cfs;

(10) Chicago Park Switchyard, located adjacent to Chicago Park Powerhouse; and

(11) all appurtenant facilities and features.

Rollins Development

The Rollins Development is composed of Rollins dam, spillway, reservoir, penstock, and powerhouse. The locations of the facilities within the Rollins Development facilities are shown on Figure 2.2-1 and in more detail on Figure 2.2-2 and Figure 2.2-3, which correspond to the numbered descriptions below.

(1) Rollins Dam, a zoned embankment dam located on the Bear River approximately 12.1 river miles upstream of Combie Dam (non-project). The dam is 252.5 feet high with a crest length of 1,260 feet and a crest elevation of 2,187.5 feet, and a drainage area of 104 square miles. The dam includes one low-level outlet (El. 1,970.0 ft) with a maximum design capacity of about 2,008 cfs at full pool;

(2) Rollins Dam Spillway, an uncontrolled concrete ogee crest spillway 620 feet in length, with a crest elevation of 2,171.0 feet and a maximum design capacity of 85,000 cfs;

(3) Rollins Reservoir, a constructed storage reservoir located on the Bear River formed by Rollins Dam. At normal maximum water surface elevation (2,171.0 ft), Rollins Reservoir extends

about 4.1 miles upstream, has a usable storage capacity of 65,989 ac-ft, a surface area of 825 acres, and a shoreline of about 19 miles;

(4) Rollins Powerhouse Penstock, an approximately 484 foot-long, 8.5 foot-diameter, steel penstock partially encased in concrete that diverts water, at a maximum design capacity of approximately 866 cfs, from Rollins Dam to Rollins Powerhouse;

(5) Rollins Powerhouse, an above-ground, outdoor powerhouse constructed of reinforced concrete and located at the toe of the dam. The powerhouse consists of one vertical axis Francis turbine with a nameplate rated capacity of 12.15 MW at a head of 208 feet and a maximum flow of 840 cfs;

(6) Rollins Switchyard, located adjacent to the Rollins Powerhouse;

(7) Four Project recreation facilities at Rollins Reservoir, which includes Peninsula Campground with 67 sites; Greenhorn Campground with 79 sites; Long Ravine Campground with 85 sites; and Orchard Springs Campground with 101 sites (each facility includes a boat launch); and

(8) all appurtenant facilities and features.

2.2.2 Existing FERC Project Boundary

The existing FERC Project Boundary, consisting of lands necessary for the safe operation and maintenance of the Yuba-Bear Hydroelectric Project and other purposes, such as recreation, shoreline control, and protection of environmental resources, encompasses 6,252.6 acres of land in Nevada, Placer, and Sierra counties, California. The majority of land in the boundary is owned by NID (4,056.3 acres). There are 1,749.3 acres of federal land, of which 1,540.8 acres are managed by the Forest Service as part of the Tahoe National Forest, 208.5 acres are managed by BLM as part of the Sierra Resource Management Area, and 447.0 acres are privately owned land.

2.2.3 Existing Overall Project Power Generation

The Yuba-Bear Hydroelectric Project has a combined gross water storage capacity of about 207,865 acre-feet of water, generated an annual average of 354.3 gigawatts per hour (GWh) from 1972 through 2007 (periods for Rollins and Bowman powerhouses are shorter as they came online in 1981 and 1986, respectively), and has a historical dependable capacity of 44.2 megawatts (MW). According to NID's FLA Exhibit B, the existing hydroelectric project's total installed capacity is 79.32 MW, and the dependable capacity is the same as historic at 44.2 MW (NID 2011).

2.3 Description of Proposed Project Under New FERC License

The Proposed Project is the acceptance of the expected new FERC license, continuance of Yuba-Bear Hydroelectric Project operations and maintenance under the terms of the new license, and implementation of the license conditions, including modifications to some facilities, project boundaries, and operations and maintenance.

When FERC issues the new license, NID may do one of the following:

- Accept the new license, which would require NID to continue to operate and maintain the Yuba-Bear Hydroelectric Project in accordance with the new license and comply with and implement all terms and conditions included in the new license (i.e., NID may not accept only some of the terms and conditions);
- Reject the new license, in which case FERC would require NID to surrender the licensed facilities, under conditions that are uncertain at this time; or
- Contest the new license by seeking rehearing before FERC and requesting FERC to incorporate different terms into the license. If NID does not contest the new license within the 30-day statutory rehearing period under the FPA, FERC will deem NID to have accepted the license.

The analysis within the CEQA Supplemental Study Proposed Project assumes the first scenario above, where NID accepts the new license issued by FERC. If NID chooses to reject the new license issued by FERC (either upon its issuance or after NID unsuccessfully challenges some of the license terms), NID would likely retain the existing Yuba-Bear dams and reservoirs but would surrender the hydropower facilities. Resulting conditions under this scenario would be speculative at this time and, if pursued, would be subject to further analysis in accordance with CEQA requirements.

2.3.1 Proposed Facilities

NID's Proposed Project would expand the existing Rollins Development through the addition of Rollins No. 2 Powerhouse; add five new streamflow gages; roadway modifications; and replace, upgrade, or install new recreation facilities, including but not limited to new parking areas, day-use areas, new/expanded campgrounds, restrooms, and information signage.

Generation Facilities

NID's only proposed generation expansion to the Yuba-Bear Hydroelectric Project is to construct a new powerhouse associated with the Rollins Development. NID anticipates that the new generating facility (Rollins No. 2 Powerhouse) would more effectively capture the combined releases from Rollins reservoir. The existing powerhouse consists of one vertical axis, Francis turbine with a rated capacity of 12.15 MW at a head of 208 feet and maximum flow of 840 cfs. NID also anticipates that the new powerhouse would be constructed entirely on NID-owned land adjacent to the existing powerhouse location in a laydown area just below the existing parking lot on the right bank of the river. NID indicates that the existing powerhouse would be unaltered and remain in full operation. The plans and design for the proposed Rollins No. 2 Powerhouse have not been developed yet; therefore, additional CEQA analysis may be required in the future once these plans and design are available.

Streamflow Gages

NID proposes to add five new streamflow gages for monitoring compliance with minimum flow releases. The new gages would be located on the downstream face of the diversion facilities at Texas, Clear, Fall, Trap, and Rucker creeks. The gages would be named YB-317, YB-318, YB-319, YB-320, and YB-321, respectively. In addition, existing USGS gages 11414410 (Canyon Creek below French Lake), 11414500 (Canyon Creek below Faucherie Lake), and 11414470 (Canyon Creek below Sawmill Lake), which are currently rated to measure up to 3 cfs, would be

improved to monitor compliance with NID's proposed minimum streamflows. Existing USGS gage 11421790 (Bear River below Dutch Flat afterbay dam) would be improved for rating.

Project Roadways

As part of the Proposed Project's Transportation Management Plan (NID 2012), NID has cross-walked Forest Service road maintenance levels to create general road maintenance levels for assessment of Primary Project Roads, encompassing the non-National Forest System roads as well.

For paved, gravel, and native surface roads, road maintenance activities include ditch grading and cleaning, outsloping (native surface), culvert cleaning and repair, road drain cleaning and repair, road re-surfacing and patching or blading, erosion control, and landslide stabilization. The roads will be inspected annually and maintained every three years for paved and gravel roads and five years for native roads. In addition to these measures, Table 2.3-1 indicates specific road rehabilitation actions for Primary Project Roads in "poor" condition.

Table 2.3-1. Summary of Primary Project Road Rehabilitation

Road Name	Length of Road for Rehabilitation (mi)	Rehabilitation Action
"B" Alarm Rd	1.5	Reduce erosion, stabilize road prism, and upgrade stream-road crossings
Bowman Dam Access Rd	0.2	Upgrade stream-road crossings
Bowman Spaulding Berm Rd	0.3	Reduce erosion and improve road drainage
Texas Creek Diversion Access Rd	0.4	Upgrading culverts
Box Car Section Rd	0.1	Monitor unstable site
Chicago Park Forebay Road	1.1	Reduce erosion, improve road drainage, and upgrade stream-road crossings
Chicago Park Forebay Road	0.6	Decommission road
Dutch Flat No. 2 Conduit Intake Access Rd	0.4	Reduce erosion, stabilize road prism, and upgrade stream-road crossings
French Lake Rd.	0.4	Reduce erosion and improve road drainage
Pipeline Outlet Access Rd	0.3	Reduce erosion and improve low water ford
Rollins Dam Spillway Access Rd	0.05	Stabilize landslide
Stump Canyon Intake Access Rd.	0.6	Reduce erosion and improve road drainage
Stump Canyon Siphon Low Level Access Rd.	0.2	Upgrade stream-road crossing
Wilson Creek Diversion Rd	0.2	Upgrade stream-road crossing

As indicated above in Table 2.3-1, NID proposes to remove a segment of Chicago Park Forebay Road from the set of primary project access roads. This road segment is presently closed by an active landslide. NID also proposes to remove the unnamed recreation road that provides access to the Jackson Meadows administrative site. NID has never used this site, nor has it used the recreation road that provides access to it and does not plan to use it in the future. NID

proposes to decommission these roads as they are not necessary for continued project operation and maintenance.

Recreation Facilities

NID's Proposed Project includes a Recreation Facilities Plan. The plan contains many components, including replacement and upgrade of existing recreation facilities and evaluation for new recreation facilities over the term of the new license. The plan includes the addition of the following specific new facilities:

- Jackson Meadows Reservoir: install animal-resistant food lockers at campsites that do not have such lockers; construct a pedestrian, single-track trail from the first loop of East Meadow campground to Pass Creek; install a one-unit vault restroom at Pass Creek overflow campground; construct an accessible trail on the shoreline from the Pass Creek boat launch parking area to the shoreline at Aspen picnic area; construct a pedestrian, single-track trail from Aspen group campground to the parking area at Aspen picnic area; develop road access and a loading/unloading area at Woodcamp picnic area with accessible parking spaces and access to the shoreline restroom and picnic sites; construct pedestrian, single-track connector trails between the project recreation facilities within the Woodcamp Complex (Fir Top, Findley, Woodcamp, and Silvertip group campgrounds and Woodcamp picnic area) and a connector trail from these connector trails to the non-project Woodcamp interpretive trailhead; and replace the existing Woodcamp boat launch facility to California Department of Boating and Waterways (California Boating) standards.
- Milton Diversion Impoundment: develop a shoreline day-use area including a gravel parking area for up to five vehicles with barriers and a single-lane hand launch designed to accessible standards; and develop up to six primitive campsites, each with a designated parking spur/space setback from the shoreline, steel fire ring, and site marker.
- Bowman Lake: develop a day-use parking area for up to 10 vehicles on NID land with vehicle barriers and an informational board (two-panel) at Jackson Creek inflow along the north shoreline/Bowman Lake Road; and designate up to 10 primitive campsites along the shoreline on NID land each with a picnic table, steel fire ring, animal-resistant food locker, parking spur/space with barriers, site marker, and resource protection signage.
- Sawmill Lake: develop a rustic, 10-unit family campground on NID land with a native surface circulation road, two-unit vault restroom, entrance station, and campsites each with a table, fire ring, animal-resistant food locker, site marker, and vehicle spur with barriers; and develop a rustic group campground on Forest Service land to accessible standards, as feasible, consisting of a single group campsite for 25 PAOT, native surface parking area for 10 vehicles with barriers, one-unit vault restroom, and hand launch.
- Canyon Creek: install animal-resistant food lockers at campsites without animal-resistant lockers.
- Dutch Flat No. 2 Forebay: install an information kiosk.
- Dutch Flat Afterbay: make a good faith effort to purchase at fair market value a parcel of land from private landowner or obtain a long-term lease or easement for use of such property or make a good faith effort to work out an agreement with the licensee of the

Drum-Spaulding Project (PG&E), to develop a day-use area that would include parking for six vehicles, six picnic tables, restroom, and a kiosk sign.

2.3.2 Proposed FERC Project Boundary

The expected FERC license would require or authorize the modification of the FERC Project Boundary for the Yuba-Bear Hydroelectric Project. NID proposes the following changes to the existing FERC Project Boundary:

- Use of contours derived from the USGS National Elevation Dataset 1/3 arc second digital elevation model as a partial replacement to survey metes and bounds that are used in the existing license to define the FERC Project Boundary around Jackson Meadows reservoir, Bowman reservoir, French Lake, Jackson Lake, Sawmill Lake, Faucherie Lake, Dutch Flat forebay, and Dutch Flat afterbay. Where the derived contour lines exceeded 200 horizontal feet from a project reservoir's normal maximum water surface, 200-foot horizontal buffers of the reservoir's maximum water surface were used to define the FERC Project Boundary.
- Removal of the area that incorporates the mineral survey area south of Dutch Flat afterbay.
- Removal of the area that incorporates the administrative site at Jackson Meadows reservoir and the recreation road that provides access to it.
- Modification of the boundary to more accurately contain and encompass the following recreation sites: East.
- Addition of the area that incorporates the primary project portion of the following roads, including a right-of-way of 20 feet on-road centerline: French Lake Dam Road (Forest Service Road 843-20), Milton Pipeline Access Road, Wilson Creek Diversion Access Road, Bunkhouse Road, Texas Creek Diversion Access Road, Bowman-Spaulding Canal Berm Road, Bowman- Spaulding Canal Access Road, Stump Canyon Siphon Intake Access Road, Canyon Siphon Low Level Valve Access Road, "B" Alarm Road, Chicago Park Forebay Road, and Chicago Park Powerhouse Access Road.

All but two of the Proposed Project recreation facilities would be within the FERC Project Boundary. These two facilities include: (1) the primitive campsites at the "Tree Camp" located along the north shoreline of Bowman Lake on Forest Service land; and (2) the walk-in campground at Sawmill Lake on NID land. Given the uncertainty of the final footprint for these two facilities, NID asked that FERC expand the FERC Project Boundary to include each facility after its final design is complete and before construction. Throughout this document, the Proposed Project area is referred to as the FERC Project Boundary.

2.3.3 Proposed Project Operations

Proposed operation of the Yuba-Bear Hydroelectric Project would be generally consistent with existing operations. However, future operations would include new and increased minimum flow releases and modified ramping rates. NID also proposes the following: (1) re-operation between PG&E's Dutch Flat No. 1 and NID's Dutch Flat No. 2 powerhouses based on water rights rather than operational or efficiency considerations; and (2) use of modified winter/spring operations implemented since 1997.

2.3.4 Proposed Project Measures and Conditions in New FERC License

The Proposed Project consists of the 2014 FEIS FERC Staff Alternative with Mandatory Conditions. This consists of Protection, Mitigation, and Enhancement (PM&E) Measures for environmental resources of the Proposed Project that have been approved and recommended by FERC for inclusion in a new license of the Proposed Project. In addition, the Proposed Project includes mandatory conditions under the FPA Section 4(e) due to the Proposed Project's use of FS and BLM lands.

Protection, Mitigation, and Enhancement Measures

In Section 5.5.2.1 of the FEIS, FERC concludes that the following environmental measures proposed by NID would protect and enhance environmental resources and would be worth the cost. FERC's recommended modifications to NID's proposed PM&E measures are shown below in *italic* text.

General Measures:

- Consult annually with the Forest Service and BLM to review operations and monitoring data from the prior year and conduct planning for ongoing project operations.
- Conduct annual employee training to familiarize project staff with special-status species, non-native invasive plants, and sensitive areas known to occur within the FERC Project Boundary on Forest Service or BLM land, and the procedures for reporting to each agency.
- Annually review special-status species lists and assess new species on federal project lands.
- Consult with the Forest Service, BLM, or, as appropriate, California Fish and Wildlife, to determine potential project-related effects of any proposed future ground-disturbing activity on federal project land.
- Develop and implement a Coordinated Operations Plan for Yuba-Bear Project, Upper Drum-Spaulding Project, and Lower Drum Project regarding implementation of flow-related measures in each project's license.
- Obtain prior written approval of the Forest Service or BLM, as appropriate, for the use of pesticides or herbicides on or affecting public land.

Geology and Soils:

- Develop and implement an erosion control and restoration plan to prevent adverse effects on environmental resources associated with erosion during the Rollins upgrade construction.
- Implement Erosion and Sediment Control and Management Plan (filed April 11, 2014) to prevent adverse effects on environmental resources associated with erosion during recreation facility construction.
- Implement Clear and Trap Creeks Channel Stabilization Plan (filed June 18, 2012) to stabilize and restore existing erosion effects from spills downstream of the Bowman-Spaulding canal, including at a minimum, Clear and Trap Creeks and Christmas Tree waterway. *Finalize plan to include other potential erosion sites determined in consultation with the agencies and post-restoration monitoring to ensure that restoration*

activities have been successful and effective over time. Coordinate plan with Canal Release Point Plan.

- Implement Canal Release Point Plan (filed April 11, 2014) to inventory, record, treat, and monitor potentially significant project-related erosion and sedimentation impacts on federal project lands and minimize future erosion and sedimentation.

Aquatic Resources

- Use six water year types (wet, above normal, below normal, dry, critically dry, and extreme critically dry) to determine appropriate monthly minimum streamflows, as shown in FEIS Appendix A-2, table 3-98. Implement extreme critically dry water year type flows below Rollins dam, Milton diversion dam, and Bowman-Spaulling diversion dam in a critically dry year that follows a critically dry or extreme critically dry year.
- To enhance aquatic habitat and support and protect resident aquatic species, provide the same or increased minimum streamflows to six project-affected reaches and provide new minimum streamflows to nine project-affected reaches, as described in FEIS Section 3.3.2.2.2, Instream Flows, and shown in the tables of FEIS Appendix A-2.
- Notify licensing stakeholders at the annual consultation meeting of all annual planned and non-routine planned canal outages in the Bowman-Spaulling diversion conduit. Provide minimum streamflow or inflow, whichever is less during canal outages in Bowman-Spaulling conduit and Upper Drum-Spaulling Project's Drum canal. Consult with licensing stakeholders if the outage is anticipated to extend past 30 days and notify FERC of any modifications to minimum streamflows agreed on for the extended outage period. Notify agencies within one business day in event of emergency outage.
- Implement overwintering minimum streamflow adjustments below Milton diversion dam and Bowman-Spaulling diversion dam in response to extended periods of low regional precipitation, as described in FEIS Section 3.3.2.2.2, Instream Flows.
- Implement Gaging Plan (filed April 11, 2014) to measure streamflows at specified locations for documenting compliance with the proposed minimum streamflow requirements listed above and described in FEIS Section 3.3.2.2.2, Instream Flows, as shown in FEIS Appendix A-2, table 3-189.
- Implement the periodic minimum streamflow settings due to remote location and access difficulties at Wilson Creek diversion dam, as described in FEIS Section 3.3.2.2.2, Instream Flows.
- From May 1 through September 15, avoid non-routine planned outages and operate the turbine/generator unit in Chicago Park powerhouse in a synchronous condense mode when the unit is not generating electricity. During non-routine planned outages that would cause Dutch Flat afterbay dam to spill to the downstream Bear River, make a good faith effort to motor the Chicago Park powerhouse until the increased flows from the Dutch Flat afterbay dam reach the tailrace of Chicago Park powerhouse to prevent a sharp decrease in flows in the Bear River downstream of the Chicago Park powerhouse.
- To reduce the risk of stranding of aquatic resources, implement spill cessation schedules and minimize flow fluctuations at Milton and Bowman-Spaulling diversion dams and Dutch Flat afterbay dam, as described in FEIS Section 3.3.2.2.1, Water Quantity, as shown in FEIS Appendix A-2, tables 3-184, 3-185, 3-186, and 3-187.

- To prevent rapid flow fluctuations in the lower Bear River below Rollins dam, balance inflow from upstream with outflows when the Rollins reservoir water surface elevation is within the top 2 to 3 feet of the reservoir.
- Implement Canal Fish Rescue Plan (filed November 21, 2013) to minimize fish losses when canals are drained for maintenance and repair.
- Develop and implement a Fish Entrainment Protection Plan for the Milton-Bowman conduit, including design, installation, and seasonal operation of fish screens to minimize entrainment of juvenile fish into the conduit.
- Ensure mobile instream large woody debris (LWD) continues downstream beyond Jackson Meadows dam, Milton Diversion dam, Sawmill dam, French dam, Faucherie dam, and Bowman dam. Annually in October, relocate LWD that has accumulated on the upstream side of Rollins dam spillway log boom to the downstream side of the log boom. Allow the LWD between the log boom and spillway to pass over the spillway when the reservoir spills to enhance aquatic habitat in the Bear River below Rollins dam.
- Develop and implement a LWD management plan for Yuba-Bear Project affected waters to identify dams where active management of LWD is necessary to ensure passage downstream of the dam. Specific plans would also be developed for management of LWD at Dutch Flat afterbay dam and Rollins dam.
- Implement Fish Population Monitoring Plan (filed November 21, 2013) to assess effects of proposed flow modifications in project-affected stream reaches identified in plan.
- Implement Foothill Yellow Legged Frog Monitoring Plan (filed November 21, 2013) to assess effects of proposed flow modifications on populations in project-affected stream reaches identified in plan.
- Implement Water Temperature and Stage Monitoring Plan (filed April 11, 2014) to assess effects of proposed flow modifications on water temperature management in project-affected stream reaches identified in plan.
- Implement Channel Morphology Monitoring Plan (filed November 21, 2013) to assess effects of proposed flow modifications on channel structure and stability in project-affected stream reaches identified in plan.
- Implement Riparian Vegetation Monitoring Plan (filed April 11, 2014) to assess effects of proposed flow modifications on diversity and persistence of riparian vegetation in project-affected stream reaches identified in the plan.
- Implement procedures to document and report incidental observations of western pond turtle during other monitoring surveys and operations consistent with Forest Service condition 51.
- Implement *Aquatic Invasive Species Prevention Guidelines* (included in Integrated Vegetation Management Plan) to minimize the potential for the introduction, dispersal, and growth of non-native invasive species in project-affected waters. *Develop an aquatic invasive species monitoring and management plan to include the prevention guidelines.*

Terrestrial Resources:

- Implement an Integrated Vegetation Management Plan on federal lands that combines all measures related to the management of terrestrial vegetation at project facilities and recreation sites and includes control of non-native invasive species, provisions for special-status species, provisions for pesticide use, and annual training, management, and reporting, *as modified to apply to all accessible project lands (particularly recreation*

sites and sensitive habitats and lands disturbed by future construction, recreational use, and project maintenance), require consultation with tribes to identify culturally significant plants, and protect culturally important species.

- Record annually all incidental observations of bird collisions/electrocutions at the Bowman-Spaulding transmission line. Consult with the Forest Service, U.S. Fish and Wildlife Service, and California Fish and Wildlife concerning measures needed to ensure the protection of birds where incidental observations of bird collisions/electrocutions illustrate a problem pole or transmission structure. Replace or retrofit poles with substantial raptor-project interaction issues as appropriate. *Include all proposed measures for avian protection at the project in an Avian Management Plan and LOPs planned for the protection of special-status birds and their habitat.*
- Record animal losses from drowning in all project canals. Provide this information to California Fish and Wildlife, the Forest Service, or BLM, as appropriate, as well as to the Commission. After consultation with the appropriate resource agencies, develop additional measures to address suspected project-related causes of mortality if there is an increasing trend in wildlife mortalities in a canal.
- Consult with the Forest Service or BLM, as appropriate, prior to replacing or retrofitting existing wildlife escape facilities and wildlife crossings along project canals, and consult with California Fish and Wildlife regarding specifications and design. Assess existing wildlife escape facilities annually to ensure they are functional and in proper working order.
- Maintain wildlife crossings on Bowman-Spaulding canal consistent with proposed wildlife crossing plan and *prepare a Wildlife Crossing Management Plan for the project that includes provisions for replacement/addition of wildlife crossing, consultation, monitoring, and reporting.*
- Implement proposed bat management measures. Document all known bat roosts within project buildings, dams, or other structures. Provide inspection results to California Fish and Wildlife, the Forest Service, and BLM, as appropriate. If bats or signs of roosting are present where project personnel routinely work, place humane exclusion devices to prevent occupation of the structure by bats. *Incorporate the proposed bat management provisions in a Bat Management Plan for the project.*
- Implement the July 2013 Bald Eagle Management Plan (filed November 21, 2013) to protect nesting bald eagles from disturbance during project operations and recreational activities.

Recreation Resources:

- Implement a Recreation Plan (filed August 29, 2012) for upgrades, maintenance, and development of new project recreation facilities on federal project lands, *as modified with regard to the implementation schedule, trail development, campground upgrades, accessibility, parking and road improvements, boat launches, water systems, and monitoring, and to exclude provisions for campground hosts or added amenities at campground host sites, and enhancements to trails, trailheads, or trail facilities that do not serve a project purpose.*
- Develop a rehabilitation plan with BLM to block, gate, and rehabilitate roads and trails at Chicago Park powerhouse and to annually meet with BLM to discuss the following year's projects.

- Provide reservoir storage information via the internet *year-round* for the following locations: Jackson Meadows reservoir; French Lake; Faucherie Lake; Sawmill Lake; Jackson Lake; Bowman Lake; and Rollins Lake.
- Develop a plan to provide real-time streamflow information in cfs to the public via the internet for the Middle Yuba River at Jackson Meadows reservoir dam, Middle Yuba River below Milton Reservoir dam, Canyon Creek below French dam, Canyon Creek below Bowman reservoir dam, Bear River below Dutch Flat afterbay dam, and Bear River below Rollins reservoir dam, within one year of license issuance, *as modified to include 15-minute interval reporting of streamflow information for these reaches (Middle Yuba River at Jackson Meadows reservoir dam, Middle Yuba River below Milton Reservoir dam, Canyon Creek below French dam, Canyon Creek below Bowman reservoir dam, Bear River below Dutch Flat afterbay dam, and Bear River below Rollins reservoir dam) where it is currently provided in 15-minute intervals and require submittal of the plan to FERC for approval.*
- Provide increased flows (target streamflow of between 120 and 150 cfs over a continuous 24-hour period as measured at gage YB-306) in Canyon Creek below French dam for whitewater boating starting between September 1 and September 30 of each year, until the date that French Lake elevation reaches 6,638 feet msl.
- Provide recreational streamflow events (continuous mean daily target streamflow of 300 cfs for at least 6 continuous days as measured at USGS gage 11408550 [Middle Yuba River below Milton diversion dam]) in any years in which spill at Milton diversion dam is 300 cfs or greater after May 1.
- Provide recreational streamflow events (continuous mean daily target streamflow of 275 cfs for at least 5 continuous days as measured at gage 11416500 [Canyon Creek downstream of the Bowman-Spaulding diversion dam] after April 1) in any years in which flow as measured at USGS gage 11416500 is 275 cfs or greater.

Cultural Resources:

- Implement the HPMP (filed October 15, 2012) upon license issuance to ensure protection of cultural resources and resources that are eligible for inclusion in the National Register.

Land Use:

- Implement the Transportation Management Plan (filed August 29, 2012) to rehabilitate and maintain primary project roads to ensure that project roads are adequately maintained.
- Implement the Fire Prevention and Response Plan (filed November 21, 2013) to provide fire prevention procedures, reporting, and safe fire practices for NID personnel and contractors responsible for operating and maintaining the project, *as revised to include all project lands and to include a period of review and revision.*
- Revise the FERC Project Boundary to remove the mineral survey area south of the Dutch Flat afterbay and the administrative site at Jackson Meadows reservoir and the recreation road that provides access to it and to include certain primary project roads, and new and rehabilitated recreation facilities.
- Develop and implement a hazardous materials spill prevention, control, and countermeasure plan for the Rollins upgrade construction, *as modified to address spill*

prevention, control, and countermeasures for all project uses/activities on all project lands.

- Develop and implement a recreation facilities construction hazardous materials spill prevention, control and countermeasure plan, *as modified to address spill prevention, control, and countermeasures for all project uses/activities on all project lands.*
- Implement the Visual Resource Management Plan (filed June 18, 2012) on federal lands to improve the visual quality of the project by reducing the visual contrast of existing and proposed project facilities.

Additional Measures Recommended by FERC Staff

- Develop and implement an aquatic benthic macroinvertebrate monitoring plan to minimize the potential for the introduction, dispersal, and growth of non-native invasive species in project-affected waters.
- Develop and implement a Fish Stocking Plan that addresses annual stocking in Rollins reservoir, Jackson Meadows reservoir, Bowman Lake, and Faucherie Lake, stocking Sawmill Lake every other year until the first Form 80 reporting year after implementation of the plan, and includes provisions for stocking fish in additional project reservoirs (French Lake) based on changes in recreational use and angling pressure over the term of the new license.

Mandatory Conditions

In the 2014 FEIS, FERC's Staff Alternative with Mandatory Conditions includes the staff-recommended PM&E measures listed above along with the following mandatory conditions. Under Section 4(e) of the Act, 16 U.S.C § 797(e), FERC must consider environmental requirements for licensing a project within a federal reservation. A federal reservation under the Act is a technical term, defined generally as a national forest, tribal land, military reservations, and other lands and interests in lands reserved for other public purposes. They include any lands and interests in lands acquired and held for any public purposes by the federal government (they do not include national monuments or national parks, where hydropower licensing is prohibited).

There are two substantive requirements for licensing a project within a federal reservation:

1. FERC must find that the license will not interfere with or be inconsistent with the purposes for which the reservation was created or acquired.
2. A license must be issued on terms that the federal agency responsible for the reservation finds are necessary for the adequate protection and utilization of that reservation. This is not a veto power, and the land managing agency may not prevent FERC from issuing the license. However, the land managing agency's conditions must be included within the FERC license or it cannot be issued.

In the FEIS, FERC staff recommended a license based on the Yuba-Bear Hydroelectric Project and modifications and additions recommended by FERC staff. The 2014 FEIS describes those modifications and additions in Section 5.5.2.2. In addition to FERC staff's modifications and additions, the final FERC license will be subject to mandatory conditions submitted by Forest Service and BLM under FPA Section 4(e). The 2014 FEIS discusses these 4(e) conditions in its Section 5.5.4 and Appendix I. For purposes of the Proposed Project and the CEQA

Supplemental Analysis, NID assumes that the Proposed Project would include the modifications and additions to the existing license recommended by FERC staff, as well as Forest Service and BLM's FPA Section 4(e) conditions.

Several 4(e) conditions consist of developing management plans associated with the new license to protect the environment listed below. The management plans included in the Proposed Project are:

- Aquatic Invasive Species Management Plan
- Bald Eagle Management Plan
- Canal Outage Fish Rescue Plan
- Canal Release Point Plan
- Clear and Trap Creeks Stabilization Plan
- Coordinated Operations Plan
- Erosion and Sediment Control Management Plan
- Fire Prevention and Response Plan
- Gaging Plan
- Hazardous Substances Management Plan
- Historic Properties Management Plan
- Integrated Vegetation Management Plan
- Large Woody Debris Management Plan
- Recreation Facilities Plan
- Transportation Management Plan
- Visual Resources Management Plan

Table 2.3-2 below shows the 144 specific conditions that would likely be included in a Yuba-Bear Project new 50-year license based on the FERC Staff Alternative with Mandatory Conditions in the FEIS. Conditions of the proposed license that are similar to articles in the existing 1963 hydropower license are also indicated in the table (NID 2011). The conditions were compiled primarily from a review of the following portions of the FEIS:

- Appendix G, Draft License Articles: Yuba-Bear Project
- Appendix I-1; Forest Service 4(e) Conditions: Yuba-Bear Project
- Appendix I-2; Bureau of Land Management 4(e) Conditions: Yuba-Bear Project

Table 2.3-2. Yuba-Bear Hydroelectric Project Environmental Conditions

Designation		Name
FS Condition No.	BLM Condition No.	FPA Section 4(e) Mandatory Conditions (Appendix I of 2014 FEIS)
1	42	Consultation ¹
2	43	Consultation Group Specific to the Yuba-Bear Project
3	64	FS/BLM Approval of Final Design
4	44	Approval of Changes
5	45	Maintenance of Improvements on or Affecting National Forest System or Bureau of Land Management Lands
6	46	Existing Claims

Designation		Name
FS Condition No.	BLM Condition No.	FPA Section 4(e) Mandatory Conditions (Appendix I of 2014 FEIS)
7	47	Compliance with Regulations
8	48	Surrender of License or Transfer of Ownership
9	49	Protection of United States Property
10	50	Indemnification
11	51	Damage to Land, Property, and Interests of the United States
12	52	Risks and Hazards on National Forest System or Bureau of Land Management Lands
13	54	Access
14	55	Crossings
15	56	Surveys, Land Corners
16	59	Signs
17	60	Ground Disturbing Activities
18	61	Use of National Forest System or Bureau of Land Management Roads for Project Access
19	62	Access By The United States
20	63	Road Use
21	-	Hazardous Substances Plan
22	57	Pesticide-Use Restrictions on National Forest System or Bureau of Land Management Lands ²
24	65	Unattended Construction Equipment
25	1 2	General Resources Measures: • Annual Employee Training • Coordinated Operations Plan
26	3	Water Year Types*
27	4	Minimum Streamflows*
28	5	Canal Outages*
29	-	Overwintering Minimum Streamflow Adjustments
30	-	Wilson Creek Diversion Dam Flow Setting
31	7	Spill Cessation Measures*
32	-	Mitigation for Entrainment
33	11	Canal Outages Fish Rescue Plan
34	12	Gaging Plan
35	58	Modifications of 4(e) Conditions after Biological Opinion or Water Quality Certification
36	13	Modifications of 4(e) Conditions in the Event of Anadromous Fish Re-introduction

Designation		Name
FS Condition No.	BLM Condition No.	FPA Section 4(e) Mandatory Conditions (Appendix I of 2014 FEIS)
37	14	Aquatic Invasive Species Management and Monitoring Plan
38	15	Vegetation and Non-Native Invasive Plant Management Plan
39	16	Monitor Animal Losses in Project Canals
40	17	Replacement of Wildlife Escape and Wildlife Crossing Facilities
41	-	Wildlife Crossings - Bowman-Spaulding Canal
42	18	Bald Eagle Management Plan
43	19, 53	Special-Status Species*
44	20	Annual Review of Special-Status Species Lists and Assessment of New Species on Federal Land
45	-	Project Powerlines
46	-	Raptor Collisions
47	21	Bat Management
48	-	Channel Stabilization Plan
49	24	Canal Release Point Plan
50	41	Erosion and Sediment Control and Management
51	22	Monitoring Program: • Fish Populations • Foothill Yellow-Legged Frog • Western Pond Turtle Incidental Observations • Channel Morphology • Water Temperature and Stage • Aquatic Benthic Macroinvertebrates* • Riparian Vegetation
52	9, 23	Large Woody Material*
53	-	Facility Occupancy Indicators and Standards
54	26	Licensee Contact*
55	28	Review of Recreation Developments*
56	27	Annual Recreation Coordination Meeting*
57	25, 30, 31, 35, 36	Recreation Plan*
58	37	Recreation Streamflow Information*
59	-	Visual Resource Management Plan
60	38	Historic Properties Management Plan
61	39	Transportation System Management Plan
62	40	Fire Management and Response Plan
63	-	Review of Improvements on National Forest System Lands
-	6	Chicago Park Powerhouse Motoring
-	8	Rollins Reservoir Elevation Control

Designation		Name
FS Condition No.	BLM Condition No.	FPA Section 4(e) Mandatory Conditions (Appendix I of 2014 FEIS)
-	10	Steepollow Creek Foothill Yellow-Legged Frog Monitoring
-	29	Recreation Survey and Monitoring
-	32	Dutch Flat After Bay Day Use Recreation Site
-	33	Chicago Park Power House and Connecting Facilities and Roads
-	34	Recreation Operation, Maintenance, and Administration
23	66	Maintenance of Improvements: Construction Inspections

*The intent of this condition is the same between FS and BLM but applies to different federal lands of the Proposed Project.

¹Similar to Article 69 in the existing 1963 hydropower license (NID 2011)

²Similar to Article 77 in the existing 1963 hydropower license (NID 2011)

2.4 Potential Permits and Approvals

Table 2.3-3 below lists the permits and approvals that may be required for the Proposed Project.

Table 2.3-3. Potential Permits and Approvals

Agency	Permit/Approval
Federal	
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act Section 7 Consultation
National Marine Fisheries Service (NMFS)	Endangered Species Act Section 7 Consultation
State Historic Preservation Office (SHPO)	Section 106 of the National Historic Preservation Act (NHPA)
State	
California Native American Heritage Commission (NAHC)	Tribal Consultation per Assembly Bill 52
State Water Resources Control Board (SWRCB)	Clean Water Act Section 401 Water Quality Certification (WQC)
California Department of Fish and Wildlife (CDFW)	2081 Incidental Take Permit
California Department of Fish and Wildlife (CDFW)	Lake and Streambed Alteration Agreement

3.0 ENVIRONMENTAL ANALYSIS

1. Project Title: Yuba-Bear Hydroelectric Project
2. Lead Agency name and address: Nevada Irrigation District, 1036 W Main Street, Grass Valley, Ca 95945
3. Contact person: Kris Stepanian, stepaniank@nidwater.com
4. Project location: Nevada, Placer, and Sierra Counties
5. Project sponsor's name and address: n/a
6. General Plan designation: various
7. Zoning: various
8. Description of project:
Under the new FERC license, NID would:
 - Continue to operate, maintain, and manage the existing Yuba-Bear Hydroelectric Project facilities.
 - Remove from licensed facilities a segment of Chicago Park Forebay Road and the unnamed recreation road that provides access to the Jackson Meadows administrative site.
 - Construct a new proposed powerhouse (the Rollins upgrade) that would be located within the existing FERC Project Boundary on NID-owned land adjacent to the existing Rollins Powerhouse.
 - Construct and rehabilitate existing facilities at the following recreation areas: Jackson Meadows reservoir, Milton diversion impoundment, Bowman Lake, Sawmill Lake, Canyon Creek, Dutch Flat No. 2 forebay, and Dutch Flat afterbay.
 - Make minor modifications to the existing FERC Project Boundary.
 - Implement the other terms and conditions in the new license.
9. Surrounding land uses and setting: Briefly describe the project's surroundings:
Mainly rural, nonurban setting, in remote locations of Nevada, Placer, and Sierra Counties.
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.): see Table 2.3-3.
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Three Native American tribes have requested consultation per Public Resources Code Section 21080.3.1.

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|--|
| ☐ Aesthetics | ☐ Agriculture and Forestry Resources | ☐ Air Quality |
| ☒ Biological Resources | ☐ Cultural Resources | ☐ Energy |
| ☒ Geology/Soils | ☐ Greenhouse Gas Emissions | ☐ Hazards & Hazardous Materials |
| ☐ Hydrology / Water Quality | ☐ Land Use/Planning | ☐ Mineral Resources |
| ☐ Noise | ☐ Population/Housing | ☐ Public Services |
| ☒ Recreation | ☐ Transportation | ☒ Tribal Cultural Resources |
| ☐ Utilities/Service Systems | ☐ Wildfire | ☒ Mandatory Findings of Significance |

3.2 Determination

On the basis of this initial evaluation:

- ☐ I find that the project would not have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project may have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date:

3.3 Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significance.

3.4 Aesthetics

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Except as provided in Public Resources Code Section 21099, would the project:</i>				
AES-1: Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
AES-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.4.1 Environmental Setting

The Proposed Project is located in Nevada, Placer, and Sierra counties, California. The facilities and features of the Proposed Project are located in the northern Sierra Nevada and Sierra Nevada foothills, which generally provide a wooded, natural, scenic backdrop. The main exceptions to the characterization of the landscape as natural are the dams, powerhouses, switchyards, a transmission line, and spillways as already present within the existing hydroelectric project.

FEIS Section 3.3.7, *Land Use and Aesthetic Resources – Affected Environment for the Yuba-Bear Project*, explains that the existing hydroelectric project includes four developments – Bowman, Dutch Flat, Chicago Park, and Rollins. The Bowman Development includes seven reservoirs, one conduit, one transmission line, and one powerhouse. The Dutch Flat Development includes one diversion impoundment, one reservoir, two conduits, and one powerhouse. The Chicago Park Development includes one reservoir, one conduit, and one powerhouse. The Rollins Development includes one reservoir and one powerhouse. The FERC Project Boundary encompasses the project facilities and features described above, as well as primary access roads and other lands necessary for recreation, shoreline management, and the protection of environmental resources.

As discussed in [Section 2.3.1](#) of this document, *Proposed Facilities*, NID's Proposed Project would expand the existing Rollins Development through the addition of Rollins No. 2

Powerhouse; add five new streamflow gages; roadway modifications; and replace, upgrade, or install new recreation facilities, including but not limited to new parking areas, day-use areas, new/expanded campgrounds, restrooms, and information signage. For the major components of the Proposed Project, such as Rollins Powerhouse No. 2, construction details are not available at this time, and may require additional review.

The following plans contain guidelines or policies related to scenic vistas and visual quality in the FERC Project Boundary:

- Placer County General Plan (Placer County 2013)
- Nevada County General Plan (Nevada County 1996)
- Sierra County General Plan (Sierra County 2012)
- Tahoe National Forest Land and Resource Management Plan (LRMP) (Tahoe National Forest 1990)
- Bureau of Land Management (BLM) Sierra Resource Management Plan (SRMP) (BLM 2008)

The Forest Service provides preferred Visual Quality Objectives (VQOs) for its lands managed under the Tahoe National Forest LRMP. These VQOs are established to restrict visually disruptive land management actions within viewsheds that are important to the public, while allowing for more intensive land management on lands that are visually less sensitive. Land that is part of the Proposed Project and is within the Tahoe National Forest is currently classified as either Retention, Partial Retention, or Modification (NID 2011). Retention VQOs promote landscapes that are perceived by the public as having an intact natural or natural-looking character. Human-made changes to these landscapes should not result in noticeable changes in form, color, or texture from those of the naturally occurring viewshed. Under these VQOs, management activities, when viewed by the public, should have an intact natural or natural-looking character. Partial Retention VQOs allow for more alteration of the landscape, but changes in forms, color, or texture should not be dominant and should be subdued by the area's natural character. The Modification VQO allows management that may visually dominate the original characteristic landscape, but activities alter vegetative, and landform must borrow from naturally established form, line, color, or texture and at such a scale that the visual characteristics are those of natural occurrences within the surrounding area or character type.

On public land administered by BLM, the Sierra Resource Management Plan (SRMP) establishes Visual Resource Classes (VRC) that require land management activities meet a specific VRC on various areas of public land administered by BLM. For the Proposed Project, the pertinent VRC Objective is III, which provides direction that management activities partially retain existing character. There is further direction that states: "Design surface-disturbing projects to meet VRM objectives; and mitigate or prohibit surface disturbing actions that do not meet VRM objectives" (BLM 2008). VRM objective III applies to existing facilities and proposed facilities, and activities on public land administered by BLM (NID 2011). The SRMP also identifies Areas of Critical Environmental Concern, one of which is proximate to the Dutch Flat Development of the Proposed Project in Placer County, but none of which are located within the FERC Project Boundary (NID 2011).

The Visual Resources Management Plan prepared by NID during the FERC relicensing process identifies measures needed to reduce the visual contrast of facilities on NFS lands and lands

administered by BLM, provides a schedule for implementing the measures, provides a process for developing specific visual quality mitigation measures should NID propose any modifications to the Proposed Project or activities on NFS land or public land administered by BLM that are not covered under the FERC license, and provides a process for modifying the VRMP (NID 2011).

3.4.2 Impact Analysis

NID filed a Visual Resource Management Plan on April 12, 2011, and a revised Visual Resource Management Plan on June 18, 2012. NID proposes to implement the plan upon FERC approval. The goal of the plan is to reduce the visual contrast of existing and Proposed Project facilities on federal lands administered by the Forest Service and BLM. The plan includes an implementation schedule. The implementation of the Visual Resource Management Plan is consistent with 4(e) license requirement Forest Service condition 59 and BLM condition 15.

NID proposes to implement its March 2013 Integrated Vegetation Management Plan at the Proposed Project. The plan would be implemented on federal lands and combines all measures related to the management of terrestrial vegetation at project facilities and recreation sites and includes control of non-native invasive species, provisions for special-status species, provisions for pesticide use, and annual training, management, and reporting. The implementation of the Integrated Vegetation and Non-native Invasive Plant Management Plan is consistent with 4(e) license requirement Forest Service condition 38 and BLM condition 15 for the Proposed Project.

Impact AES-1: Have a substantial adverse effect on a scenic vista?

The objectives of NID's Visual Resource Management Plan aim to improve the visual quality of the Proposed Project, bring project facilities into compliance with the visual quality objectives (VQOs) in the Tahoe National Forest LRMP and Visual Resource Management (VRM) objectives in BLM's SRMP to the extent possible, identify and address project facilities that don't meet objectives, and use measures to aid the Proposed Project in integrating into its visual environment (NID 2012).

Proposed modifications to operation and routine maintenance of the Proposed Project would include some minor ground-disturbing activities, which may result in the removal of vegetation, including trees, but would generally be consistent with existing operations and would not have a substantial adverse effect on a scenic vista. The Proposed Project is located within the Tahoe National Forest; therefore, any vegetation removal planned on lands within the Tahoe National Forest would be coordinated with the Forest Service and BLM through NID's Integrated Vegetation Management Plan (NID 2013) and would not result in a substantial adverse effect on a scenic vista.

Changes in future operations for the Proposed Project would be related to new and increased minimum flow releases and modified ramping rates and, therefore, would not result in a substantial adverse effect on a scenic vista. As a result, **no impact** would occur, and no mitigation is required.

Impact AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Interstate 80, State Route (SR) 20, and SR 174 are eligible state scenic highways in the vicinity of the FERC Project Boundary (Caltrans 2025). Sections of SR 20 and SR 49 are officially designated state scenic highways also in the vicinity; however, none fall within the FERC Project Boundary. Proposed modifications to operations and routine maintenance associated with the Proposed Project are not located within or adjacent to either of these eligible routes. Therefore, the Proposed Project would not substantially damage scenic resources, such as trees, rock outcroppings, or historic buildings within eligible viewsheds of Interstate 80 and SR 20, SR 174, and SR 49. As a result, **no impact** would occur, and no mitigation is required.

Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

As discussed in FEIS Section 3.3.7, *Land Use and Aesthetic Resources – Affected Environment for the Yuba-Bear Project*, to determine if the existing hydroelectric project facilities are in compliance with visual direction from both the Forest Service and BLM, 23 project facilities were assessed using those agencies' visual assessment protocols. All of the facilities meet the Forest Service or BLM land management visual direction from the back and middle grounds. At around 2 miles, Sawmill Lake dam and Dutch Flat No. 2 Conduit meet land management visual direction. However, at this same distance, the larger dams, such as Jackson Meadows and Rollins dams, start to show contrast with the surrounding landscape. The Bowman-Spaulding conduit, Bowman-Spaulding transmission line, and Jackson Lake dam meet, with few exceptions, the land management visual direction, because these facilities are generally not seen and are rarely viewed by the public. The rest of the project facilities do not meet land management visual direction in the foreground or immediate foreground.

According to FEIS Section 3.3.7.2, *Land Use and Aesthetic Resources - Environmental Effects for the Yuba-Bear Project*, certain project facilities on federal lands do not meet current, applicable visual resource management objectives as defined by the Forest Service and BLM. Project buildings, fences, guard rails, and spoil piles create visual contrast with the surrounding landscape. However, the Visual Resources Management Plan identifies the project facilities that would be painted a darker color and the spoil piles that would be removed to reduce visual contrast and includes an implementation schedule. The plan also addresses consultation during implementation and reporting and establishes a process to evaluate future activities at the Proposed Project that may result in changes to the visual environment. The implementation of the plan would make project facilities more consistent with established visual quality objectives and would improve overall visual quality in the FERC Project Boundary. An annual coordination meeting would allow NID to work cooperatively with the Forest Service and BLM to review the visual mitigation activities planned for the upcoming year, identify any revisions needed, and make any adjustments to the plan or schedule, as appropriate. Additionally, consultation with the Forest Service and BLM, as appropriate, on any new project facilities or enhancements to existing project facilities would ensure that the facilities are designed and constructed to be consistent with applicable visual quality objectives.

Modifications to operations and routine maintenance activities within the Proposed Project would be consistent with the existing visual setting surrounding these facilities and would not substantially degrade the visual character for public viewers. In addition, O&M activities within the FERC Project Boundary, which is located on Tahoe National Forest lands, would be consistent with the VQOs outlined in the Tahoe National Forest LRMP and would undergo future visual review in consultation with FERC and the Forest Service, as described in the Visual Resource Management Plan.

The proposed flow release modifications and O&M of existing facilities within the FERC Project Boundary would not constitute a change to the visual setting. Therefore, the Proposed Project would not substantially degrade the existing visual character or quality of public views in their respective areas or their surroundings. As a result, **no impact** would occur, and no mitigation is required.

Impact AES-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Any new sources of light associated with the Proposed Project would be in kind with existing facilities or recreational areas and would not cause substantial light or glare. Thus, the Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

3.5 Agriculture/Forestry Resources

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
AG-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
AG-4: Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.5.1 Environmental Setting

The Proposed Project is located in Nevada, Placer, and Sierra counties, California. The existing hydroelectric project includes four developments – Bowman, Dutch Flat, Chicago Park, and Rollins. As discussed in FEIS Section 3.3.7, *Land Use and Aesthetic Resources - Environmental Effects for the Yuba-Bear Project*, the Bowman Development includes seven reservoirs, one conduit, one transmission line, and one powerhouse. The Dutch Flat Development includes one diversion impoundment, one reservoir, two conduits, and one powerhouse. The Chicago Park Development includes one reservoir, one conduit, and one powerhouse. The Rollins

Development includes one reservoir and one powerhouse. The FERC Project Boundary encompasses the project facilities and features described above, as well as primary access roads and other lands necessary for recreation, shoreline management, and the protection of environmental resources.

In addition, the existing FERC Project Boundary encompasses 6,252.6 acres of land. A portion of the land within the FERC Project Boundary is owned by the U.S. and managed by the Forest Service as part of the Tahoe National Forest (25 percent or 1,540.8 acres) and by BLM as the Sierra Resource Management Area (3 percent or 208.5 acres).

Further, NID's proposed changes to the FERC Project Boundary would decrease the area within the FERC Project Boundary by about 170 acres. The Proposed Project would continue to encompass lands owned by the U.S. and managed by the Forest Service and BLM. The areas proposed to be removed from the FERC Project Boundary, which include the mineral survey area south of the Dutch Flat afterbay, and the administrative site at Jackson Meadows reservoir and the recreation road that provides access to it, are not necessary for continued project operations. The FERC Project Boundary would encompass all facilities and features necessary for the operation of the Proposed Project, including all primary project roads and existing, new, and/or rehabilitated recreation areas and recreation access roads.

3.5.2 Impact Analysis

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance are found in the FERC Project Boundary (California DOC 2020). Therefore, the proposed activities/actions included in the Proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. As a result, **no impact** would occur, and no mitigation is required.

Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract?

None of the lands within the FERC Project Boundary are listed under an existing Williamson Act contract (DOC 2022). Additionally, the Proposed Project is confined to existing facilities and features in the FERC Project Boundary, none of which are zoned for agriculture. Therefore, the Proposed Project would not conflict with an existing area zoned for agriculture or a Williamson Act contract. As a result, **no impact** would occur, and no mitigation is required.

Impact AG-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Some of the lands within and surrounding the FERC Project Boundary are zoned for timber production. Additionally, some of the federal lands in the FERC Project Boundary are managed for timber resources by the Tahoe National Forest. There are approximately 1,496 acres of

forest in Nevada County, 129.5 acres in Placer County, and 316.7 acres in Sierra County. The proposed modifications and O&M of existing recreational facilities would include some ground-disturbing activities, which may result in the removal of vegetation, including trees; however, these activities would not occur in areas zoned for timber production. Any vegetation removal planned on federally-owned lands within the Proposed Project would be coordinated with the FS and BLM. Other Proposed Project activities, including flow release modifications, would not result in the rezoning of forest land.

Timberland Production Zones in the FERC Project Boundary consist of approximately 186 acres in Nevada County and 2.4 acres in Placer County. Activities and actions included in the FERC Project Boundary would not conflict with the existing zoning for forest land, timberland, or those lands zoned as a Timber Production Zone since proposed O&M of the Proposed Project would generally be consistent with existing operations. Consequently, no forest land, timberland, or timberland zoned Timberland Production that is within the FERC Project Boundary and vicinity would be affected by the Proposed Project. Therefore, the Proposed Project would not conflict with the existing zoning or cause rezoning of these uses. As a result, **no impact** would occur, and no mitigation is required.

Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use?

As mentioned in Impact AG-3 above, there is forest land within the FERC Project Boundary; however, no forest land would be converted to a non-forest use because of the Proposed Project. As a result, **no impact** would occur, and no mitigation is required.

Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

See responses to Impact AG-1, AG-2, AG-3, and AG-4 above. Activities associated with the Proposed Project would be limited to minor construction activities, routine maintenance and operations of existing facilities. Implementation of the proposed modifications and management plans would not result in the conversion of farmland to non-agricultural use or forest land to non-forest use. No other changes in the existing environment as a result of the Proposed Project would lead to the conversion of farmland or forest land. Therefore, **no impact** would occur, and no mitigation is required.

3.6 Air Quality

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
AQ-3: Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
AQ-4: Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☐	☒

3.6.1 Environmental Setting

The Proposed Project is located in Nevada, Placer, and Sierra counties. Proposed Project facilities within Placer County are within the Placer County Air Pollution Control District (PCAPCD), while facilities within Nevada and Sierra counties are within the Northern Sierra Air Quality Management District (NSAQMD).

Table 3.6-1 shows the attainment status of Nevada, Placer, and Sierra counties relative to state ambient air quality standards. Table 3.6-2 shows the attainment status of Nevada, Placer, and Sierra counties relative to federal ambient air quality standards.

Table 3.6-1. State ambient air quality standards

Pollutant	Nevada	Sierra	Placer
Ozone (1hr)	Attainment	Unclassified	Non-attainment
Ozone (8hr)	Non-attainment	Unclassified	Non-attainment
Carbon Monoxide (CO)	Unclassified	Unclassified	Unclassified
Nitrogen Dioxide	Attainment	Attainment	Attainment
Fine Particulate Matter (PM _{2.5})	Unclassified	Unclassified	Unclassified
Respirable Particulate Matter (PM ₁₀)	Non-attainment	Non-attainment	Non-attainment
Sulfur Dioxide	Attainment	Attainment	Attainment

Pollutant	Nevada	Sierra	Placer
Lead	Attainment	Attainment	Attainment
Sulfates	Attainment	Attainment	Attainment
Hydrogen Sulfide	Unclassified	Unclassified	Unclassified
Visibility Reducing Particles	Unclassified	Unclassified	Unclassified

Sources: California Air Resources Board and Environmental Protection Agency Green Book

Notes: Unclassified/Attainment: lacks sufficient monitoring data to demonstrate attainment but is assumed attainment.

Table 3.6-2. Federal ambient air quality standards

Pollutant	Nevada	Sierra	Placer
Ozone (1hr)	-	-	-
Ozone (8hr)	Non-attainment	Attainment	Non-attainment
Carbon Monoxide	Attainment	Attainment	Non-attainment
Nitrogen Dioxide	Unclassified/ Attainment	Unclassified/ Attainment	Unclassified/ Attainment
Fine Particulate Matter (PM _{2.5})	Unclassified	Unclassified	Non-attainment/ Unclassified
Respirable Particulate Matter (PM ₁₀)	Unclassified	Unclassified	Unclassified
Sulfur Dioxide	Unclassified	Unclassified	Unclassified
Lead	Attainment	Attainment	Attainment
Sulfates	N/A	N/A	N/A
Hydrogen Sulfide	N/A	N/A	N/A
Visibility Reducing Particles	N/A	N/A	N/A

Sources: California Air Resources Board and Environmental Protection Agency Green Book

Notes: Unclassified/Attainment: lacks sufficient monitoring data to demonstrate attainment but is assumed attainment.

Both PCAPCD and NSAQMD have published CEQA guidance documents listing significance thresholds for construction projects. Construction projects with estimated emissions above significance thresholds are permitted only when mitigation measures are applied to limit emissions to the extent practicable. Table 3.6-3 and Table 3.6-4 show the CEQA significance thresholds for PCAPCD and NSAQMD, respectively.

Table 3.6-3. PCAPCD Significance Thresholds

	Nitrogen Oxides (NO _x) (lbs/day)	Reactive Organic Gases (ROG) (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)	CO (lbs/day)
Construction/ Operations	82	82	82	Not established	Not established
Operations	55	55	82	Not established	Not established

Source: PCAPCD CEQA Handbook, 2017, <https://www.placerair.org/1801/CEQA-Handbook>

Table 3.6-4. NSAQMD Significance Thresholds

	NO_x (lbs/day)	ROG (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)	CO (lbs/day)
Level A – Less than Significant	<24	<24	<79	Not established	Not established
Level B – Potentially Significant	24-136	24-136	79-136	Not established	Not established
Level C – Mitigation Required	<136	<136	<136	Not established	Not established

Source: Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects, 2007, <https://www.mynevadacounty.com/DocumentCenter/View/15130/NSAQMD-Land-Use-Guidelines-PDF>

The NSAQMD guidance document suggests three tiers of construction mitigation measures corresponding to the three ranges of estimated emissions in the table above.

3.6.2 Impact Analysis

Impact Methodology

Construction activities associated with the Proposed Project would occur over the course of the next 20 years. While certain activities would occur shortly after relicensing, construction of the various recreation facilities would be spread out over time.

To simplify the emissions analyses of multiple recreational facilities, each recreational facility was categorized into a group according to the anticipated level of construction. Facilities requiring minimal improvements were classified as “Improvements” while facilities requiring a total redevelopment or extensive new construction were classified as a “Major Rehabilitation.” The third category was “Major Boat Launch” because of its unique size, design, and ground disturbance.

CalEEMod was used to calculate both the unmitigated and mitigated construction emissions using a generalized, but realistic, construction scenario for each of these categories. Each construction activity was then aggregated by year of construction to find the maximum daily emissions. Results were split by county (Nevada or Placer) and air district (PCAPCD or NSAQMD) according to the geographic location of the activity.

A conservative approach was taken with construction starting as early as 2026. However, if construction commences at a later date, construction impacts would be lower than analyzed here due to the likely use of a more energy-efficient and cleaner burning construction vehicle fleet mix, pursuant to State regulations that require vehicle fleet operators to phase-in less polluting heavy-duty equipment. As a result, should construction commence at a later date than analyzed in this analysis, air quality impacts would be lower than the impacts disclosed herein.

Operational emissions from the Proposed Project include the vehicular emissions from increased visitation of the recreational areas, increased campfire emissions from the buildout of the recreational facilities/campgrounds, and implementation of various management plans. The Recreation use and Visitor Survey published in 2011 uses visitor data from 2009 to predict visitation in 2030, 2040, and 2050 based on estimated population growth of the region.

Operational emissions are evaluated qualitatively, as many of the activities are continuations of current conditions and would not contribute to a significant number of trips or other emissions.

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?

Table 3.6-5 shows the estimated anticipated construction emissions of the Proposed Project.

Table 3.6-5. Estimated Construction Admissions of the Proposed Project

	NO _x (lbs/day)	ROG (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)	CO (lbs/day)
Placer County Improvement	8.207	0.833	1.561	0.549	12.220
Nevada County Improvement	9.007	0.903	1.603	0.588	12.520
Nevada County Major Rehabilitation	11.800	1.125	2.128	0.788	15.730
Nevada County Major Boat Launch	10.280	0.950	1.853	0.710	12.520

As shown in Table 3.6-3 and Table 3.6-4, PCAPCD and NSAQMD, respectively, have prepared CEQA guidance manuals that establish significance thresholds by which a project may be safely assumed to conform to the relevant air quality plan for the surrounding area. As shown in Table 3.6-5, the Proposed Project would not exceed significance thresholds for relevant pollutants. The Proposed Project would not create a permanent stationary source of air contaminants, include a land use that would generate a substantial number of trips from mobile sources, or involve the use of high-ROG architectural coatings or solvents during operations and maintenance activities. The Proposed Project would not include any major construction activities that would exceed air quality significance thresholds.

Operational emissions would include a continuation of existing operational, maintenance, and inspection emissions as well as an increase in vehicle emissions and additional campfire emissions from more visitors due to the recreational improvements. Tables 3.2-1 through 3.2-3 and Tables 3.7-7 through 3.7-9 in the Recreation Use and Visitor Survey show the estimated current and future usage of recreation facilities within the FERC Project Boundary (NID 2011). The Proposed Project would not significantly increase the service capacity of recreational areas or other facilities, and a negligible increase in vehicle trips during operations would be anticipated. Therefore, the Proposed Project would not conflict with or obstruct implementation of applicable air quality plans. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Table 3.6-1 and Table 3.6-2 show the attainment status for Nevada, Placer, and Sierra counties regarding criteria pollutants. For state standards, all three counties are listed as non-attainment for PM₁₀. All other criteria pollutants are listed as attainment or unclassified.

As discussed previously, PCAPCD and NSAQMD have developed thresholds of significance that focus on quantifying and reducing emissions from both short and long-term operational emissions, specifically mobile sources. For the purposes of this analysis, net increases of criteria pollutants would be deemed cumulatively considerable if they would exceed the thresholds developed by PCAPCD and NSAQMD.

Construction activities would include site preparation, grading, use of off-road heavy equipment, worker, vendor, and haul truck travel, and asphalt paving. Construction would occur in various locations over the course of 20 years. These construction activities would result in emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from construction equipment and vehicle exhaust. As discussed previously, none of these pollutants would exceed established thresholds.

Operational emissions would include tailpipe emissions from additional visits as well as campfire emissions. While visits would increase in future years, emissions for ROG, NO_x, CO, SO_x, and CO₂ would likely decline as more efficient vehicles are used over time. The Proposed Project would not include a significant increase of maintenance activities, therefore routine maintenance activities and operational emissions for the Proposed Project would continue to be below the established significance thresholds. The incremental contribution of the Proposed Project to criteria pollutant emissions would not be cumulatively considerable. The Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations?

Certain population groups are considered more sensitive to air pollution and odors than others—in particular, children, elderly, and acutely ill and chronically ill persons, especially those with cardiorespiratory diseases such as asthma and bronchitis. Sensitive receptors (land uses) indicate locations where such individuals are typically found, namely schools, day care centers, hospitals, convalescent homes, residences of sensitive persons, and parks with active recreational uses, such as youth sports. Given the remote locations of the Proposed Project and forest recreation land uses of the Proposed Project, there are no characteristic sensitive receptors that would be affected by construction activities. Furthermore, since all routine maintenance activities would be short-term (days) compared with long-term exposure criteria (years), no significant exposures to engine exhaust or fugitive dust would occur. Therefore, the Proposed Project would not result in exposure of sensitive receptors to substantial pollutant concentrations. As a result, **no impact** would occur, and no mitigation is required.

Impact AQ-4: Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?)

The Proposed Project does not include any land uses (for example, livestock operations, refineries, wastewater treatment plants, landfills) that would generate any substantial amounts of long-term, odorous emissions. Short-term routine maintenance activities would generate odors during maintenance vehicle or equipment operation. However, given the remote location of the Proposed Project, the short duration of maintenance activities, and equipment used in accordance with existing diesel fuel standards that limit the amount of sulfur in fuel to 15 parts per million, no significant amount of odors is anticipated from routine maintenance or ongoing operational activities associated with the Proposed Project. Therefore, there would be no adverse effects on a substantial number of people within the FERC Project Boundary. As a result, the Proposed Project would have **no impact**, and no mitigation is required.

3.7 Biological Resources

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.7.1 Environmental Setting

This section describes the regional and local environmental setting with regard to biological resources. The majority of this information was gathered from the FEIS for the Proposed Project in Sections 3.3.2, *Aquatic Resources*, and 3.3.3, *Terrestrial Resources*. The biological study area for the Proposed Project is the FERC Project Boundary.

Vegetation Communities and Habitats

Vegetation types within the FERC Project Boundary are distributed along an elevation gradient. Vegetation in the foothills (below 2,000 feet msl) is dominated by an overstory of gray pine and ponderosa pine, with a mixture of small stands of hardwoods including canyon live oak, interior live oak, and blue oak, and low-elevation chaparral shrubs such as wedgeleaf ceanothus, manzanitas, and coffeeberry. The forest is occasionally interrupted by patches of non-native annual grasslands dominated by a variety of bromes with some medusahead grass. In some areas, pure stands of ponderosa pine exist where the conifer has been planted following fires and/or logging. In riparian areas, black cottonwood, white alder, and valley oak are common.

At mid-elevations (between 2,000 and 5,000 feet msl), dominant vegetation includes incense cedar, Douglas fir, white fir, madrone, and sugar pine. Additionally, significant stands of Brewer's oak occupy south-facing slopes and areas of annual grasslands. Chaparral species include whiteleaf manzanita, greenleaf manzanita, mountain whitethorn, wedgeleaf ceanothus, deerbrush, and poison oak. Riparian areas are dominated by white alders, maple, and willows. In addition, the mid-elevation band includes several outcrops of habitat characterized by serpentine soil. Dominant plants in these areas are leather oak, gray pine, and wedgeleaf ceanothus. Additional serpentine indicators in these areas include milkwort jewelflower and yellow pincushion.

At higher elevations (above 5,000 feet msl), the forested areas are dominated by an incense cedar, red fir, white fir, and Jeffrey pine overstory. Lodgepole pines exist in moist soils in meadows and along shorelines. Black oak, willow, quaking aspen, and mountain alder are common deciduous trees and may form a subcanopy beneath the conifer overstory. Some areas are barren, devoid of vegetation due to rocky and steep terrain with little to no soil layer. The shrub layer is dominated by mountain whitethorn, huckleberry oak, pinemat manzanita, and bush chinquapin.

California Wildlife Habitat Relationships (CWHR) and CalVEG data was combined to map vegetation communities throughout the FERC Project Boundary. The communities within each development are listed in Table 3.7-1, their locations shown in the mapbooks included in Appendix A. It should be noted that the location and extent of these habitats have not been ground-truthed since surveys for the FEIS.

Table 3.7-1. Vegetation Communities

Habitat	Bowman	Dutch Flat	Chicago Park	Rollins Reservoir
Annual Grassland		X	X	X
Barren	X	X	X	X
Blue Oak – Foothill Pine				X
Cropland				X
Jeffrey Pine	X	X		
Lacustrine	X	X	X	X
Lodgepole Pine	X			
Mixed Chaparral		X	X	X
Montane Chaparral	X	X		
Montane Riparian	X			

Habitat	Bowman	Dutch Flat	Chicago Park	Rollins Reservoir
Montane Hardwood	X	X	X	X
Montane Hardwood - Conifer	X	X	X	X
Ponderosa Pine		X	X	X
Red fir	X			
Sierran Mixed Conifer	X	X	X	X
White fir	X	X		
Wet Meadow	X			
Urban	X			

Special-status Natural Communities and Aquatic Resources

Sensitive communities and aquatic resources included are those that are protected under CDFW, Sections 1600–1603 of the California Fish and Game Code, and/or Sections 401 and Section 404 of the Clean Water Act. Sensitive habitats typically either contain special-status species, their associated habitat, or are sufficiently rare themselves to warrant protection as ranked by the NatureServe Heritage Program Status Rank (S1–S3) (Faber-Langendoen et al. 2012).

In the FERC Project Boundary, some aquatic resources and their associated riparian corridors would be considered sensitive communities because of their unique hydrophytic vegetation and ability to support special-status species. These areas may include, but are not limited to, reservoirs, streams, riparian areas, and wetlands. The Tahoe National Forest considers stands of quaking aspen a community of concern and specifically asked that this species be surveyed as part of the relicensing studies.

Fisheries Habitat and Essential Fish Habitat

Fisheries habitats present in the FERC Project Boundary are created by 13 dams, 11 reservoirs and four water conduits. These all fall within the watersheds of three major rivers that cross through the FERC Project Boundary: the Middle Yuba, South Yuba, and Bear rivers. For more information on each of these waterbodies refer to FEIS Section 3.3.2, *Aquatic Resources*. Streams and reservoirs across the FERC Project Boundary support 23 fish species. These species were observed during surveys for the FEIS. There are no anadromous fish within the FERC Project Boundary. One endangered fish species, Lahontan cutthroat trout, is known to occur within the FERC Project Boundary.

The Magnuson-Stevens Act requires federal agencies to consult with NMFS on all actions that may adversely affect essential fish habitat (EFH). There is no EFH within the FERC Project Boundary for the Proposed Project as there is no anadromy within the FERC Project Boundary.

Critical Habitat

Designated critical habitat for Sierra Nevada yellow-legged frog encompasses portions of the FERC Project Boundary (50 C.F.R. Part 17). Portions of the Dutch Flat and Bowman developments including all facilities associated with French dam, Faucherie dam, Sawmill dam, and Bowman dam and powerhouse occur in Sierra Nevada yellow-legged frog critical habitat.

Fish and Wildlife Movement Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented habitats. Riparian corridors associated with the various rivers, and their tributaries, likely facilitate local and regional wildlife movement.

Most of the watershed basins associated with the FERC Project Boundary have downstream dams that are not part of the Proposed Project that block the migration of anadromous fishes, although the Proposed Project dams act as existing aquatic migration barriers to current fish populations. Canals and other facilities may act as barriers to local and regional wildlife movement; however, wildlife crossings are present and several measures are included in the Proposed Project to increase permeability.

Special-status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area, or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as CDFW, USFWS, and private organizations such as the California Native Plant Society (CNPS). The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this document, special-status species are defined as follows:

- Listed, proposed, or candidates for listing under the federal Endangered Species Act (ESA; 50 C.F.R. § 17.11 – listed; 61 Federal Register 7591 (February 28, 1996) – candidates)
- Listed or proposed for listing under the California Endangered Species Act (CESA; Fish and Game Code, § 2050 et seq.; California Code of Regulations, tit. 14, § 670.1 et seq.)
- Designated as a species of special concern by CDFW
- Designated as fully protected by CDFW (Fish and Game Code, § 3511, 4700, 5050, 5515)
- Species that meet the definition of rare or endangered under CEQA (14 California Code of Regulations Section § 15380), including CNPS List Rank 1b and 2
- Species designated as sensitive by the Forest Service for the Tahoe National Forest under Forest Service Manual 2672.11, 2670.44–2670.5

The results of the USFWS, NMFS, CDFW, CNPS, and Forest Service queries identified several special-status species with the potential to be affected by activities associated with the Proposed Project. Tables in Appendix A, Biological Resources Information, provide descriptions of the habitat requirements for each species and conclusions regarding the potential for each species to be affected by the Proposed Project. In cases where a determination was made that no suitable habitat for a given species was present, that species is not analyzed further in this document (Appendix A).

Results of the relicensing studies were reviewed to help inform the potential for special-status species to occur in the FERC Project Boundary; however, the majority of these studies are over

a decade old, making some of the findings and conclusions regarding the presence or absence of species outdated. The species tables in Appendix A can be referenced to see which species have the potential to be affected by activities associated with the Proposed Project.

3.7.2 Impact Analysis

For this impact analysis, activities associated with the Proposed Project are defined as modifications to existing flow operations, management plan implementation, and routine operations and maintenance, including vegetation management, minor recreational facilities improvements, and road maintenance. Operations and maintenance would be conducted in a similar manner to existing conditions: in or around existing infrastructure, with very minimal, if any, ground disturbance or encroachment into undisturbed adjacent habitats. The disturbance area for activities associated with the Proposed Project is defined as areas where ground disturbance, vegetation clearing, or in-water work is occurring, along with associated access areas.

As previously stated in Section 2, Proposed Project, the new license for the Proposed Project will require several changes to recreation sites and facilities. Because the future recreation facility improvements would be defined through future planning, those projects will be analyzed separately and are not part of this scope of analysis. Site and construction plans for future undefined work associated with the Proposed Project will require discretionary approvals and environmental analysis prior to any construction activities.

Proposed operations would be generally consistent with existing operations. Significant changes in future operations, however, are related to new and increased minimum flow releases and modified ramping rates. NID also proposes the following: (1) re-operation between PG&E's Dutch Flat No. 1 and NID's Dutch Flat No. 2 powerhouses based on water rights rather than operational or efficiency considerations; and (2) use of modified winter/spring operations implemented since 1997. The analysis included herein is based in part on these considerations and modifications including 4e conditions and a streamflow model that consists of historical hydrological flow data in the FERC Project Boundary from 1976 to 2008 for flows within the FERC Project Boundary. Analysis of operational impacts for the Lower Yuba River is also included.

Lastly, the biological resources impact analyses below consist of conditions and plans described below. Where appropriate, conditions of the new license will be administered to minimize potential impacts on these resources.

Conditions and Implementation Plans

As part of the Proposed Project and in consultation with other relicensing participants, NID has developed resource implementation plans in an effort to limit significant impacts associated with the Proposed Project on environmental resources. These implementation plans have been filed with the Final License Application and accepted by FERC. Implementation plans that specifically address or refer to biological resources and include measures to minimize impacts on biological resources are described below. In addition, potential impacts on biological resources that have the potential to result from plan implementation are summarized below. Implementation plans that would have no positive or negative influence on biological resources are not included below.

Fish Protection and Management during Canal Outages Plan

The Proposed Project includes water conveyance facilities (e.g., diversion conduits and canals) that NID periodically draws down (i.e., drains some/all of the water from the facility) for the purpose of facilitating maintenance activities. These conveyance facilities may also be drawn down during emergencies. The objective of the Fish Protection and Management during Canal Outages Plan is to minimize impacts (including mortality) to resident fish during outages or other maintenance activities while complying with all laws, regulations, and NID policies, where applicable. The process for canal outages includes oversight by a biologist, coordination with appropriate agencies, and methods for rescuing and salvaging fish (NID 2011). The purpose of this plan is to minimize effects on fish. No impacts on biological resources resulting from plan implementation are anticipated.

Bald Eagle Management Plan

The goal of the Bald Eagle Management Plan is to minimize the potential for Proposed Project operations and maintenance, as well as recreation activities, to disturb nesting bald eagles by implementing measures such as Limited Operating Periods (LOPs) that are consistent with federal and State guidelines. The Bald Eagle Management Plan requires protocol-level surveys for nesting bald eagles within one mile of major Proposed Project lakes every five years. Other measures include establishing nest buffers and LOPs for work within nesting buffers, nest monitoring, and annual employee awareness training (NID 2011). The purpose of the Bald Eagle Management Plan is to minimize effects on nesting bald eagles. No impacts on biological resources resulting from plan implementation are anticipated.

Transportation Management Plan

The Transportation Management Plan is intended to provide guidance for the rehabilitation and maintenance of roads on all lands in the FERC Project Boundary. Roads associated with the Proposed Project are non-general use roads used primarily for activities associated with the Proposed Project. Many of the proposed road rehabilitation measures include upgrading stream crossings and culverts. The Transportation Management Plan includes provisions to provide for fish and aquatic passage and proper stream function for all stream crossings associated with Proposed Project road improvement projects and that are identified as fish habitat areas (NID 2011). Normal maintenance activities identified in this plan include road surface maintenance, repair and replacement of damaged culverts, cleaning debris and rockfall from drainage channels, and vegetation removal to allow adequate sight distances and open travel way. All of these activities have the potential to impact biological resources.

Integrated Vegetation Management Plan

The Integrated Vegetation Management Plan (IVMP) is intended to provide guidance for the management of vegetation on federal lands within the FERC Project Boundary. The IVMP includes measures to meet the following goals: (1) manage nonnative invasive plants by preventing their introduction, establishment, and spread, and by controlling and locally eradicating known infestations; (2) revegetate and restore native vegetation in areas disturbed by activities; (3) protect sensitive areas; (4) manage vegetation in recreation sites to ensure public safety, stand health, and maintain a natural environment; and (5) implement vegetation management and hazard reduction activities, according to best management practices (BMPs). Vegetation management is limited to areas adjacent to infrastructure, unless authorized by agencies such as the Forest Service during the annual consultation meeting. Species-specific measures include conducting special-status plant surveys of all federal land in the FERC Project Boundary at least every ten years to identify known populations of rare plants, imposing LOPs

for various special-status birds (California spotted owl, American goshawk, and great gray owl), and restricting the use of pesticides within 500 feet of known special-status frog habitat (foothill yellow-legged frog, California red-legged frog, and Sierra Nevada yellow-legged frog). Finally, NID's IVMP includes provisions for an annual consultation meeting between NID and the agencies that choose to attend. Although this plan states it is only required on federal land, measures in the IVMP would be applied to all lands in the FERC Project Boundary. Activities outlined in the IVMP, such as vegetation management and hazard tree removal, have the potential to affect biological resources. Potential impacts resulting from these activities would be mitigated as described in the impact assessment below.

Erosion and Sediment Control Management Plan

The Erosion and Sediment Control Management Plan specifies NID and Forest Service BMPs to control site-specific erosion and sedimentation impacts during new construction, reconstruction, and heavy maintenance of facilities, including emergency erosion control measures and protocols to control sedimentation during and after severe storm events. Temporary erosion prevention and control measures would be implemented during construction or reconstruction of facilities and infrastructure. This includes, but is not limited to, reconstruction at dam sites, road reconstruction, and recreation site development where ground disturbance and/or vegetation removal is expected (NID 2011). Activities associated with this plan are not anticipated to impact biological resources.

Riparian Vegetation Monitoring Plan

A Riparian Vegetation Monitoring Plan was filed with FERC by Forest Service and BLM on April 11, 2014, and NID agreed to implement that Plan (May 12, 2014). The plan describes the monitoring methods, data analysis, and reporting requirements to be implemented. Three to six monitoring transects would be co-located in each stream reach with cross sections measured under the Channel Morphology Monitoring Plan. Monitoring would be conducted during the first year following license issuance, years 5 and 10 of the new license, and one additional year between year 1 and year 10 following a spill event. The need for continued monitoring beyond year 10 would be determined based on the review of the monitoring results by the agencies. No impacts on biological resources resulting from the implementation of the Riparian Vegetation Management Plan are anticipated.

Foothill Yellow-legged Frog Monitoring Plan

The purpose of the Foothill Yellow-legged Frog Monitoring Plan is to monitor foothill yellow-legged frog populations in stream reaches where the foothill yellow-legged frog has been found and includes sites where data are needed to assess response to flow-related changes in conditions in the proposed new licenses (e.g., minimum flows, spill cessation, water temperatures, and aquatic habitat suitability). All findings would be reported to interested agencies, including the Forest Service and CDFW. The purpose of the Foothill Yellow-legged Frog Monitoring Plan is to collect data to monitor known population of foothill yellow-legged frog. No significant impacts on biological resources resulting from plan implementation are anticipated.

Fire Prevention and Response Plan

The purpose of the Fire Prevention and Response Plan is to provide fire prevention procedures, reporting, and safe fire practices for personnel and contractors responsible for operations and maintenance in the FERC Project Boundary. Most of the actions included in the Fire Prevention

and Response Plan would not impact biological resources, with the exception of utility corridor and hazard tree clearing. All clearing would follow the specifications of the IVMP.

Recreation Facilities Plan.

The primary goal of the Recreation Facilities Plan is to manage public recreation use of the Proposed Project's recreation facilities over the term of the license, and minimize recreation-use impacts to natural, historic, and prehistoric resources within the FERC Project Boundary. The Recreation Facilities Plan proposes several recreation improvements including new facilities and enhancements to existing facilities. Only enhancements to existing facilities, which include very minimal ground disturbance or work limited to the replacement or improvement of existing structures, roads or developed areas, are included in this impact analysis. In addition, vegetation management in and around recreation facilities will be conducted per the IVMP and is included in this plan and analysis. Activities associated with the Recreation Facilities Plan that have the potential to impact biological resources include disturbance resulting from recreation enhancement activities and road resurfacing, as well as vegetation management.

Canal Release Plan

The Canal Release Plan provides information on NID's preferred and emergency canal drainage structures, associated release points, and immediate downstream spill channel (known collectively in the Canal Release Plan as a "Canal Release Point") and is intended to establish practices that will minimize adverse impacts to water quality. These practices include reducing flow rates in advance of major storm events to reduce risk of emergency spills, utilizing existing "sand settling" features in canals to prevent migration of fines into spillway channels and downstream receiving streams, and modifying spill release flows when draining canals to control erosion and spillway channel turbidity. Activities associated with the Canal Release Plan are not anticipated to impact biological resources.

Impact Discussion

Mitigation measures are presented below to avoid, minimize, and/or mitigate for potentially significant impacts not sufficiently mitigated for through implementation of the conditions and plans, as necessary. Given the large area, range of elevations, and breadth of habitats associated with the Proposed Project, many of the special-status species and other sensitive biological resources would not occur across the entirety of the FERC Project Boundary and, thus, measures would not necessarily be required for all activities. For this reason, the impact discussion and avoidance and minimization measures presented in the following sections would be implemented as mitigation measures generally applying to all areas and activities of the Proposed Project, unless otherwise specified by a qualified biologist reviewer, to supplement any avoidance, minimization, and monitoring of biological resources included in implementation plans.

Given the expansive temporal and spatial nature of the Proposed Project, the potential for various biological resources to be affected by components of the Proposed Project vary depending on activity, location, and timing. For this reason, potential impacts on biological resources may need to be assessed on an activity-by-activity basis, especially activities that could result in more significant ground disturbance, vegetation clearing, or encroachment into habitats adjacent to infrastructure (see MM-BIO-1 below). The implementation of some of the mitigation measures provided in the impact analysis are contingent upon a review by a qualified

biologist and the need for them would be determined after a review of the activity proposed and site conditions.

Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Based on the results of the literature review and the findings from previous surveys, several special-status plant and wildlife species are known to occur, or have the potential to occur, in the FERC Project Boundary. The special-status species or species groups identified below were determined to have the potential to occur in the FERC Project Boundary and may be affected either directly or through habitat modifications, or indirectly through effects that could occur post-activity. The avoidance and minimization measures presented under each special-status species group would be implemented for any activities resulting in ground disturbance, vegetation removal, or in-water work as determined by a qualified biologist (MM-BIO-1).

Special-status Plants

Surveys for special-status plants were conducted as part of the relicensing studies. Some statuses have changed since the surveys were conducted, so not all plants observed are still special-status. Some observed plants that remain special-status include Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeae*), wooly-fruited sedge (*Carex lasiocarpa*), and water bulrush (*Schoenoplectus subterminalis*). The literature review concluded that suitable habitat for numerous special-status plant species is present in the FERC Project Boundary. Special-status plant species with the potential to occur in the FERC Project Boundary are listed in Appendix A, along with their listing status. Species with a Forest Service sensitive (FSS) listing and no other federal, state, or CRPR listing would be considered sensitive only on Tahoe National Forest land.

If special-status plants are present in areas proposed for disturbance, individuals or populations could be affected by compaction, trampling, removal, erosion, or degradation of habitat. Degradation of habitat could include the spread of non-native invasive plants into areas supporting special-status plants. As stated in FEIS Section 3.3.3, *Terrestrial Resources*, the IVMP includes measures to prevent and control the spread of non-native invasive plants and to protect known sensitive areas, including special-status plant populations. The IVMP requires a botanical survey of the entire FERC Project Boundary every ten years. This will facilitate the identification and avoidance of special-status and high-priority non-native invasive plant populations. It was determined by FERC in the FEIS that management plans that are part of the proposed new licenses would apply and be implemented throughout all land that is part of the Proposed Project for the term of the license. This would include implementation on privately owned and other lands in addition to federal land.

Implementation of measures in the IVMP would allow for regular identification and mapping of special-status plant populations which would then be avoided during routine maintenance activities including vegetation and hazard tree removal. Other routine operations and maintenance would largely be confined to developed lands of existing infrastructure or areas subject to long term and ongoing disturbance. Measures included in the IVMP also serve the purpose of controlling the spread of non-native invasive species by requiring surveys,

monitoring and treatment, as well as revegetation of areas disturbed by activities related to the Proposed Project.

Per the IVMP, botanical surveys are required every 10 years; however, there is potential for plant populations to spread and/or shift location over the course of several years. For this reason, plant populations mapped near areas proposed for disturbance have the potential to be impacted by activities related to the Proposed Project if the population is altered since the last botanical survey. Without mitigation, implementation of activities related to the Proposed Project may result in direct and/or indirect significant impacts on these species if they are present in areas proposed for disturbance.

To minimize additional potential impacts on special-status plant species on both federal and privately owned lands, including direct take of individuals and degradation of habitat, implementation of the following avoidance, minimization, and mitigation measures are recommended to supplement the conditions and plans. General biological mitigation measures (**MM-BIO-1** through **MM-BIO-3**) that will pertain throughout other topics have been included as well as specific mitigation measures (**MM-PLANT-1** and **MM-PLANT-2**). Therefore, the impacts to special-status plants as a result of the Proposed Project would be **less than significant with mitigation incorporated**.

Mitigation Measures:

MM-BIO-1 Biologist Review. Prior to the start of activities associated with the Proposed Project that have the potential for in-water work or significant ground disturbance and/or vegetation removal, a qualified biologist shall conduct a desktop or field review, as appropriate, to determine whether any sensitive biological resources (e.g., special-status species, sensitive communities, aquatic resources) have the potential to be impacted by the proposed activity. If special-status species and/or sensitive biological resources could be impacted, the biologist shall determine what avoidance, minimization, and mitigation measures are required to avoid impacts and NID will implement those measures. If the qualified biologist determines that the proposed activity would have no impact on special-status species or sensitive biological resources, then no further steps will be necessary.

MM-BIO-2 Biological Monitor. Prior to the start of an activity associated with the Proposed Project, if deemed necessary during the review in MM-BIO-1, a qualified biologist(s) shall monitor activities that could affect special-status species and/or sensitive biological resources. The amount and duration of monitoring would depend on the activity and would be determined by the qualified biologist, and monitoring reports would be provided as specified in applicable permits. In addition to standard field monitoring, the duties of the qualified biologist shall comply with all conditions contained in permits and licenses associated with the Proposed Project, but could include activities such as clearance surveys, flagging or fencing off environmentally sensitive areas for avoidance, and monitoring.

If deemed necessary during the review in MM-BIO-1, the biological monitor shall conduct clearance surveys for special-status species prior to the start of activities associated with the Proposed Project on the first scheduled day of work, prior to the commencement of any work. In the event that a target species is found within or directly adjacent to the disturbance areas, the area shall be left unaffected until the individual(s) have left the area or a relocation decision has been made in consultation with the appropriate agencies (for example, USFWS, BLM, CDFW, and Forest Service).

MM-BIO-3 Minimizing Footprint. During all activities associated with the Proposed Project, the work areas shall be reduced to the smallest possible footprint. All parking, storage areas, laydown and staging sites, and any other surface-disturbing activities shall be limited to previously disturbed areas whenever possible. Any sensitive areas to be avoided during Proposed Project activities shall be fenced and/or flagged as close to work limits as feasible.

MM-PLANT-1 Special-status Plant Surveys. Prior to the start of activities associated with the Proposed Project that have the potential for significant ground disturbance and/or vegetation removal, a review for the most recent botanical survey data shall be conducted to determine whether any known populations of special-status plants occur within 500 feet of the proposed disturbance footprint. A special-status plant survey conducted by a qualified botanist shall be required if one of the following circumstances applies:

- There are known special-status plant populations within 500 feet of the disturbance area and botanical surveys have not been conducted in the proposed disturbance footprint in the last 5 years. The survey would determine whether nearby special-status plant populations have spread into the disturbance area.
- There are known special-status plant populations in the proposed disturbance area. The survey would determine the current extent of the special-status plant population that could be directly affected by activities.

These surveys shall document whether special-status plants may be affected by the activity and shall be conducted in accordance with CDFW's *Protocols for Surveying and Evaluating Effects on Special-Status Native Plant Populations and Sensitive Natural Communities* (2018). Surveys shall be scheduled to coincide with known blooming periods, and/or during appropriate developmental periods that are necessary to identify the plant species of concern. If neither of the above circumstances apply, then no surveys are required.

MM-PLANT-2 Special-status Plant Avoidance. If any state-listed, federally listed, FSS (on Tahoe National Forest land), and/or CNPS List 1 or CNPS List 2 plant species are found within 100 feet of disturbance areas during the surveys, these plant species shall be avoided to the greatest extent possible and the following shall be implemented:

- Any special-status plant species that are identified in or adjacent to the proposed disturbance areas, but not proposed to be disturbed, shall be protected by flagging, signage, orange plastic fence, and/or silt fence as appropriate based on site conditions to limit the effects of activities and material stockpiles on any special-status plant species.
- If activities would result in the loss of greater than 10 percent of occupied habitat for a special-status plant species, NID will consult with the agency with jurisdiction over the species and, if required, develop in consultation with that agency a mitigation plan that will describe a program to transplant, salvage, cultivate, and reestablish the species at suitable sites (if feasible); payment to an in-lieu fee program, if available; means and methods to propagate affected special-status plants through vegetative or reproductive means (for example, harvesting of seed or seed bank through topsoil collection, salvaging and transplanting or collecting of cuttings), as appropriate for the species, and transplant at suitable receiving sites as close to the existing population as possible. Propagation and transplantation shall occur prior to initiation of the activity. The receiving location shall be evaluated and chosen based on similarity to conditions at the transplant

source location. Site conditions to consider when choosing a receiving site shall include aspect, substrate, hydrology, associated species, and canopy cover. The transplanted plants shall be monitored for at least 1 year following transplantation. If the plant is an FSS species, the mitigation plan shall be submitted to the Forest Service for review and comment at least 30 days prior to implementation.

- The actual level of mitigation may vary depending on the sensitivity of the species, its prevalence in the area, the location of the occurrence, and the current state of knowledge about overall population trends and threats to its survival; however, at a minimum, the species and habitat must be replaced at a 1:1 ratio (individuals or acreage of occupied habitat).
- Mitigation as required in applicable regulatory permits obtained by NID from USFWS, CDFW, and/or the Forest Service, or through consultation during the annual meeting, will satisfy this measure.

Special-Status Invertebrates

Western bumble bee (*Bombus occidentalis*) and Monarch butterfly (*Danaus plexipus*) are the two special-status invertebrates with the potential to occur in the FERC Project Boundary. Western bumble bee became a candidate for listing under the California Endangered Species Act on June 18, 2019. Therefore, it is unlawful to injure, harass, or take any western bumble bee individuals without an Incidental Take Permit issued by the California Department of Fish and Wildlife. The U.S. Fish and Wildlife Service published a proposal to list the Monarch butterfly as a threatened species under the ESA on December 12, 2024. As of the writing of this document, the 90-day public comment period is still open at the end of which the Service will make a final decision on the species' status.

Western bumble bee may be found throughout the FERC Project Boundary; however, open shrub, meadow, and wetland habitats with an abundance of flowering plants provide optimal habitat for this species. Colonies typically nest in underground cavities such as small mammal burrows, but can also use above-ground features including hollow logs, brush piles, and thatched grass. The nesting season typically begins in mid-March and ends by October (Forest Service 2017). Potentially significant impacts on western bumble bee, if it is present, include loss of foraging plants, loss of nest habitat, changes in foraging behavior, nest abandonment, reduced nest success, or direct mortality.

Monarch butterfly and its host plant have been observed within the FERC Project Boundary (Xerces Society 2018). Monarchs rely on milkweed plants (*Asclepias* spp.) for its primary foraging plant and obligate larval host plant. Eggs are laid on milkweed across a variety of habitats, such as fields, roadside areas, open areas, wet areas, or urban gardens. Adults will feed on nectar from many flowers during breeding and migration. Site characteristics for successful reproduction are poorly understood in the western population, though it is assumed that suitable sites include high humidity, dappled sunlight, a nearby water source, and protection from high winds, storms, and fluctuating temperatures (Xerces Society 2018). Potentially significant impacts to Monarch butterfly, if it is present, include loss of foraging and larval host plants and direct mortality of eggs on destroyed host plants.

To minimize potential impacts on special-status invertebrates, including direct take of individuals and degradation of habitat, implementation of **MM-BEE-1**, **MM-BEE-2** and **MM-MON-1** and **MM-MON-2** are needed to supplement the conditions and plans. Implementation of the general

biological mitigation measures identified above (MM-BIO-1 through MM-BIO-3) along with specific mitigation measures are required to reduce potentially significant impacts on special-status invertebrates. The requirement to implement the following measures shall be determined by the qualified biologist, in accordance with MM-BIO-1. Therefore, impacts to special-status invertebrates as a result of the Proposed Project would be **less than significant with mitigation incorporated**.

Mitigation Measures:

MM-BEE-1 Western Bumble Bee Nest Avoidance. A qualified biologist shall conduct a site review (MM-BIO-1) prior to activities that could result in significant ground disturbance and, if they determine suitable nesting and foraging habitat for western bumble bee is present in or within 50 feet, or an agreed minimum distance determined through consultation with CDFW, of the disturbance area, then nesting and foraging habitat shall be avoided. Suitable habitat shall be avoided by a minimum of 50 feet, if feasible, or work shall be done between November and February to avoid the nesting season.

MM-BEE-2 Western Bumble Bee Habitat Replacement. Mitigation for permanent impacts on western bumble bee nesting and foraging habitat shall be provided at a minimum 1:1 ratio. Mitigation is to be determined in consultation with CDFW. Mitigation as required in applicable regulatory permits obtained by NID from CDFW or during the annual consultation meeting may be applied to satisfy this measure. Implementation of the IVMP would minimize impacts on special-status invertebrates by requiring annual employee awareness training, avoiding known biologically sensitive areas, and restoring habitat for special-status species through revegetation activities. Additionally, implementation of MM-BIO-1 to MM-BIO-3 would provide general avoidance, including but not limited to reducing areas of disturbance to the smallest footprint feasible to avoid unnecessary encroachment into areas that may support western bumble bee and valley elderberry longhorn beetle. Implementation of MM-BEE-1 and MM-BEE-2 would further minimize disturbance to western bumble bee by requiring avoidance of nesting habitat for bees, replacement of permanent loss of bee habitat, and mitigation for unavoidable impacts.

MM-MON-1 Milkweed Mapping. A qualified biologist will identify and map locations and species of milkweed plants in areas that would be permanently or temporarily impacted by the Proposed Project.

MM-MON-2 Milkweed Avoidance. Temporary construction activities will be modified to avoid milkweed and monarch butterfly habitat. Where avoidance is not possible, impacts will be considered permanent. Fencing and/or signage will be used to identify the presence of milkweed and monarch butterfly habitat for the duration of construction. All temporary work and staging areas will be located at least 30 feet from milkweed plants.

Special-status Aquatic Species

Six special-status aquatic species have the potential to occur in the FERC Project Boundary including two fish, three amphibians, and one reptile. Resident rainbow trout also occur in the FERC Project Boundary but are not considered special status. Avoidance measures for all species along with a final impact determination for all special-status aquatic species is included at the end of this subsection.

Special-status Fish

Lahontan cutthroat trout is a federally threatened fish subspecies of inland trout that occurs in cool flowing water with available cover of well-vegetated and stable stream banks, in areas where there are velocity breaks and in relatively silt free, rocky riffle-run areas (WNT 2020). LCT can survive in higher temperature waters for short periods of time. The species inhabits both lakes and streams but is an obligate stream spawner. Small, intermittent streams and headwater reaches are sometimes used as spawning sites (Trotter 1987). Spawning typically occurs between April and July depending on environmental conditions such as stream flow and water temperature (Moyle 2002). Females deposit eggs in small gravel beds within riffles or pool crests (USFWS 1995). Consecutive year spawning is uncommon, but some individuals spawn multiple times. Lahontan cutthroat trout is historically known to occur in the Middle Yuba River.

Hardhead (*Mylopharodon conocephalus*) is a California species of special concern that has potential to occur within the FERC Project Boundary. Hardhead is a large, native minnow typically found in low- to mid-elevation streams. The species inhabits areas with clear, deep pools with sandy, gravel/boulder substrates in slow moving streams. Hardhead tends to be absent in streams with introduced predators. The species has been historically documented in the South Yuba and Middle Yuba River.

The quantity and quality of aquatic habitat may be affected by Proposed Project operations, including the influence of flow, wetted perimeter, magnitude and frequency of inundation, availability and dispersal of LWD, the diversity and persistence of riparian vegetation, and distribution and characteristics of sediment/substrate. The objectives of various measures proposed by NID, and those recommended by relicensing stakeholders, are to improve aquatic habitat conditions for resident aquatic biota compared with existing conditions. During relicensing studies, NID conducted instream flow studies (technical memorandum 3-2, Instream Flow) to determine how streamflow affects habitat for aquatic organisms in selected project-affected stream reaches. These studies generated estimates of various indexes including weighted usable area (WUA) and wetted perimeter breakpoint, of available aquatic habitat as a function of flow or stage. Determining an optimum flow regime frequently requires balancing the seasonal requirements of various species and life stages, because flow conditions that create optimal habitat are often not consistent among species and life stages. The results of these studies were used by NID, and the relicensing stakeholder to inform decisions related to minimum streamflows. In general, the goal of these discussions was to agree on a minimum flow schedule that would accommodate a balance of optimal habitat conditions. Monitoring surveys for resident fish populations, as well as foothill yellow-legged frog, aquatic benthic macroinvertebrates, and water temperature and stage in these reaches would provide information to assess the effects of implementing the back-to-back critically dry water year measure on these resources and aquatic habitat during extreme drought.

As discussed in FEIS Section 3.3.2, Aquatic Resources – Environmental Effects of Water Year Type for the Yuba-Bear Project, to improve habitat conditions for resident aquatic organisms, NID proposes a monthly minimum streamflow regime (YB-AQR1, Part 2) for 15 project-affected stream reaches conditioned on six water year types. NID's proposed minimum streamflows are generally consistent with minimum streamflows specified in Forest Service condition 29 and BLM condition 4 and recommended in California Fish and Wildlife recommendation 2.2 for the respective stream reaches as shown in Tables 3.7-2 through 3.7-5 below for reaches that have potential for special-status fish. According to Table 3-148 of FEIS Appendix A, *Aquatic*

Resources Tables, NID and the relicensing stakeholders anticipate that the proposed minimum streamflow regime would preserve or enhance aquatic habitat compared to conditions with minimum streamflows (where they have been specified) under the existing license. Compared to baseline flowpast conditions, the proposed flows for the Proposed Project would frequently provide more habitat for a greater percentage of the time during summer and fall (a beneficial impact), when unregulated flows in many high elevation headwater stream reaches would otherwise be less than the proposed flows. Differences (Table 3.7-2 through Table 3.7-5) between baseline and proposed flows in the winter and spring are greater but not outside of the species thresholds for flows and temperature gradients.

Furthermore, during dewatering and canal outages, the Canal Outages Fish Rescue Plan (NID 2013) would be implemented to minimize potential impacts on special-status fish, including direct take of individuals and sedimentation of aquatic habitat. Therefore, the Proposed Project would have a **less than significant impact** on special-status fish, and no mitigation is required.

Table 3.7-2. Difference between Proposed and Modeled Flows from in the Middle Yuba River Below Milton Diversion to Our House Diversion (cfs)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Extreme Critically Dry	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	3.0	1.0	1.0	1.0
Critically Dry	3.0	3.0	3.0	3.0	3.0	3.0	7.0	17.0	12.0	3.0	3.0	3.0
Dry	3.0	3.0	3.0	3.0	3.0	3.0	12.0	27.0	17.0	7.0	3.0	3.0
Below Normal	7.0	7.0	7.0	7.0	7.0	17.0	27.0	47.0	27.0	12.0	7.0	7.0
Above Normal	7.0	7.0	7.0	7.0	12.0	22.0	32.0	57.0	32.0	17.0	12.0	12.0
Wet	12.0	12.0	12.0	12.0	12.0	27.0	37.0	67.0	37.0	17.0	12.0	12.0

Table 3.7-3. Difference between Proposed and Modeled Flows in Canyon Creek Below Bowman Dam (cfs)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Extreme Critically Dry	1.0	2.0	2.0	2.0	2.0	2.0	4.0	3.0	3.0	1.0	1.0	1.0
Critically Dry	3.0	4.0	4.0	4.0	4.0	4.0	11.0	12.0	10.0	7.0	7.0	7.0
Dry	7.0	8.0	8.0	8.0	8.0	8.0	13.0	17.0	12.0	12.0	12.0	12.0
Below Normal	7.0	8.0	8.0	8.0	13.0	13.0	28.0	37.0	27.0	12.0	12.0	12.0
Above Normal	7.0	8.0	8.0	8.0	18.0	18.0	33.0	47.0	32.0	22.0	17.0	17.0
Wet	12.0	13.0	13.0	18.0	23.0	23.0	38.0	57.0	37.0	27.0	17.0	17.0

Table 3.7-4. Difference between Proposed and Modeled Flows in the Bear River below Dutch Flat Afterbay (cfs)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Extreme Critically Dry	-3.0	2.0	2.0	2.0	5.0	10.0	15.0	5.0	0.0	0.0	0.0	0.0
Critically Dry	-3.0	2.0	2.0	2.0	5.0	10.0	15.0	5.0	0.0	0.0	0.0	0.0
Dry	-2.0	3.0	3.0	3.0	10.0	15.0	20.0	10.0	5.0	0.0	0.0	0.0
Below Normal	0.0	5.0	5.0	5.0	15.0	20.0	25.0	15.0	10.0	0.0	0.0	0.0
Above Normal	3.0	8.0	8.0	8.0	17.0	25.0	30.0	20.0	12.0	2.0	2.0	2.0
Wet	3.0	8.0	8.0	8.0	25.0	35.0	40.0	30.0	20.0	5.0	5.0	5.0

Table 3.7-5. Difference between Proposed and Modeled Flows in the Bear River below Bear River Canal Diversion Dam and Impoundment (cfs)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Extreme Critically Dry	-20.0	0.0	0.0	0.0	0.0	0.0	0.0	-20.0	-20.0	-20.0	-20.0	-20.0
Critically Dry	0.0	5.0	5.0	5.0	5.0	5.0	25.0	5.0	10.0	10.0	10.0	10.0
Dry	0.0	8.0	8.0	8.0	8.0	10.0	25.0	5.0	10.0	10.0	10.0	10.0
Below Normal	-20.0	10.0	10.0	10.0	10.0	10.0	30.0	-10.0	-10.0	-5.0	-5.0	-5.0
Above Normal	-10.0	20.0	20.0	20.0	20.0	20.0	55.0	25.0	50.0	34.0	34.0	5.0
Wet	-10.0	30.0	30.0	30.0	30.0	30.0	55.0	25.0	50.0	50.0	50.0	5.0

Fish populations in the Lower Yuba River south of the FERC Project Boundary are not expected to be impacted by changes in temperature regulated by NID below Englebright Dam as concluded in NID's impact analysis as part of the October 2022 AIR responses to the FERC FLA filing (Appendix B).

Other Special-status Aquatic Species

Other special-status aquatic species with the potential to occur in the FERC Project Boundary include foothill yellow-legged frog (federal threatened), California red-legged frog (federal

threatened), Sierra Nevada yellow-legged frog (federal endangered, state threatened), and northwestern pond turtle (federal proposed threatened). All of these species were observed during relicensing surveys. Aquatic habitats and adjacent uplands throughout the FERC Project Boundary may provide suitable habitat for these species and as such these species may be impacted by the changes in minimum flows resulting from the Proposed Project.

Foothill yellow-legged frog is a mainly aquatic frog that ranges from north central Oregon, south through the Coast Range Mountains, western foothills of the Cascade Range and Sierra Nevada Range of California, and in isolated populations in the transverse ranges of Southern California. Suitable breeding habitat includes wide, sun-dappled mainstream channels (CDFW 2018). Breeding typically occurs between May and July and is dependent upon factors such as streamflow and air and water temperatures. Tributary confluences with distinctive channel morphology and boulders that create microhabitats with below ambient flow provide attractive breeding locations (Kupferberf 1996). During fall and winter, non-breeding habitat typically includes small tributary streams with perennial flow (Bourque 2008; Gonsolin 2010; Kupferberg 1996). FYLF has been documented to occur in the Middle Yuba River, Canyon Creek, and Bear River below the Bear River Canal Diversion Dam and Impoundment.

Increased flows, reduced flow fluctuations, and cooler water temperatures that would result from the Proposed Project are anticipated to enhance stream habitat not only for fish but for other aquatic species such as special-status frogs. In FEIS Section 3.3.2, *Aquatic Resources*, it is anticipated that the proposed minimum streamflows would preserve or enhance aquatic habitat for resident aquatic species as compared with existing conditions. For example, the habitat modeling in Table 3-166 of FEIS Appendix A, *Aquatic Resources Tables*, for foothill yellow-legged frog indicates that the proposed minimum streamflows would provide 83 to 100 percent of the maximum available habitat for foothill yellow-legged frog eggs and tadpoles under extreme critically dry to below normal years providing a beneficial impact to the species.

The Project components of French Dam, Faucherie Dam, Sawmill Dam, and Bowman Dam and Powerhouse occur within area designated as Sierra Nevada yellow-legged frog critical habitat. Individuals were sighted during 2009 surveys at French Lake and suitable habitat in the form of large, deep, permanent ponds was found near Jackson Meadows Reservoir and Faucherie Lake. Any project activities that impact critical habitat features could be a significant impact to the species. However, USFWS issued a Biological Opinion (BO) in April 2019 concurring with FERC that the Proposed Project may affect, but is not likely to adversely affect Sierra Nevada yellow-legged frog and its critical habitat similarly to what is concluded in the FEIS. Table 3.7-6 below shows the minimal changes in stage elevation in French Lake from the Proposed Project.

Also included in USFWS' BO was the conclusion that the proposed relicensing Project may affect, but is not likely to adversely affect California red-legged frog (CRLF). CRLF was not directly observed during relicensing survey efforts. Although there are areas of potentially suitable habitat near the Chicago Park Project component, there are not any known occurrences of CRLF within the vicinity of the FERC Project Boundary. It is unlikely for CRLF to occur within the FERC Project Boundary and therefore impacts to this species are not expected.

Northwestern pond turtle (NWPT) tends to inhabit permanent ponds, lakes, side channels, backwaters, and pools of streams, but it is uncommon in high-gradient streams. Basking sites are important habitat elements for the western pond turtle and may include rocks, logs, banks, emergent vegetation, root masses, and tree limbs. Although it is highly aquatic, this species

often overwinters in forested habitats, and in the summer, it lays eggs in shallow nests in sandy or loamy soil at upland sites as much as 1,200 feet from aquatic habitats. This species has been observed in the Dutch Flat Afterbay, Chicago Park conduit, and Rollins Reservoir. Other project locations offer suitable habitat for this species along the Bear River below the Bear River Canal Diversion Dam and Impoundment, a PG&E facility. Most of the water released by NID just upstream structure is diverted by PG&E at Bear River Canal Diversion Dam and Impoundment structure (Table 3.7-5). Reservoir elevations would only be slightly affected by the Proposed Project as shown below in Tables 3.7-6 through Table 3.7-8; thus, no additional effects on amphibians like NWPT or reptiles using the reservoirs are expected. Changes in streamflow to potential habitat along the Bear River are also not expected to fluctuate greatly on average across water year types during breeding months of NWPT and therefore are not expected to impact the species (Table 3.7-5).

Table 3.7-6. Difference between Proposed and Existing Reservoir Stage Elevations in French Lake (ft amsl)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
All Years	3.8	3.6	4.1	3.2	1.9	1.8	-0.5	-1.4	-1.4	-1.8	-2.9	-4.1
Extreme Critically Dry	-3.0	-3.8	-4.5	-5.1	2.8	0.7	1.2	0.5	-0.2	-0.8	-1.6	-2.3
Critically Dry	4.2	3.6	2.9	2.2	0.1	#N/A	6.8	2.3	1.7	1.2	-0.1	-3.0
Dry	3.6	4.7	5.2	4.2	-0.5	-0.8	-3.9	-4.1	-4.7	-5.5	-6.6	-4.3
Below Normal	3.3	1.9	1.5	2.4	0.1	-2.2	-3.0	-0.7	-1.4	-2.0	-2.2	-3.7
Above Normal	4.9	3.5	3.6	2.2	0.2	1.2	-1.2	-0.6	-0.2	-0.4	-1.6	-4.0
Wet	3.7	4.2	6.1	5.4	12.2	10.5	3.6	-1.2	0.0	-0.1	-1.7	-4.6

Table 3.7-7. Difference between Proposed and Existing Reservoir Stage Elevations in Dutch Flat Afterbay (ft amsl)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
All Years	1.1	1.0	1.0	0.9	1.1	1.0	1.3	1.2	1.0	1.0	1.1	0.5
Extreme Critically Dry	4.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.8	7.0
Critically Dry	1.0	1.0	1.0	1.0	1.0	#N/A	1.0	1.0	1.0	1.0	1.0	1.1
Dry	1.0	1.0	1.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
Below Normal	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.1
Above Normal	1.0	1.0	0.6	0.9	0.8	0.8	1.0	1.0	1.0	1.0	1.0	0.1
Wet	1.0	0.9	0.8	0.6	2.2	1.0	2.4	1.8	1.0	1.0	1.0	0.0

Table 3.7-8. Difference between Proposed and Existing Reservoir Stage Elevations in Rollins Reservoir (ft amsl)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
All Years	-9.6	-9.5	-8.2	-8.5	-6.6	-1.8	-1.3	-2.5	-2.1	-2.3	-2.8	-3.4
Extreme Critically Dry	7.2	-9.4	-6.9	0.0	-34.1	-20.5	-30.7	-15.7	-24.7	-31.9	-36.7	-19.2
Critically Dry	-17.1	-18.1	-20.4	-18.4	-20.3	#N/A	0.0	-0.7	0.8	-1.2	-11.7	-30.4
Dry	-11.6	-20.7	-21.3	-18.5	-1.1	-0.1	-0.1	-1.1	-0.8	-2.2	-1.4	-0.5
Below Normal	-8.2	-1.4	-0.8	-4.8	-11.1	-0.3	-0.2	-1.1	-2.8	-0.4	0.0	0.3
Above Normal	-10.2	-1.8	-0.5	-2.0	-2.2	-0.9	-0.4	-0.5	-0.8	-1.2	-0.3	0.1
Wet	-6.8	-7.8	-3.1	-5.4	-3.5	-1.0	-0.9	-5.9	-2.7	-1.3	-0.9	0.1

Conditions in the Lower Yuba River south of the FERC Project Boundary are not expected to be impacted by changes in temperature regulated by NID below Englebright Dam as concluded in NID's impact analysis as part of the October 2022 AIR responses to the FERC FLA filing (Appendix B). Further, additional conditions in the Lower Yuba River that are outside of NID's control such as flow, basking habitat, and predators may impact these species. Therefore, Proposed Project would have less than significant impacts to other special-status aquatic species in the Lower Yuba River.

Activities associated with the Proposed Project such as culvert maintenance or replacement as described in the Transportation Management Plan and any in-water work or work adjacent to suitable habitat have the potential to significantly affect special-status aquatic species and/or their associated habitat if they are present. The IVMP provides guidelines regarding avoidance of known sensitive resources, including special-status amphibians, during vegetation management activities. In addition, use of pesticides is restricted in areas within 500 feet of known locations of California red-legged frog, Sierra Nevada yellow-legged frog, or foothill yellow-legged frog. If these restrictions cannot be adhered to, then NID is required to conduct populations monitoring in the affected area as part of the IVMP.

The Canal Outages Fish Rescue Plan (NID 2013) would be implemented to minimize potential impacts on special-status fish during construction activities, including direct take of individuals and sedimentation of aquatic habitat. Implementation of MM-AQUATICS-1 and MM-AQUATICS-2 would supplement the Canal Outages Fish Rescue Plan and reduce potential impacts to other special status aquatic species. Therefore, through implementation of MM-AQUATICS-1 and MM-AQUATICS-2 combined with previously listed measures MM-BIO-1 through MM-BIO-3, Proposed Project impacts to special status aquatic species would be **less than significant impact with mitigation incorporated**.

Mitigation Measures:

MM-AQUATICS-1 Stranded/Entrained Aquatic Species Rescue and Salvage. During dewatering, and for the duration of any Proposed Project activities that involve dewatering of any waterbodies or waterways containing aquatic species, a qualified biologist(s) shall make a

good faith effort consistent with the Canal Outages Fish Rescue Plan (NID 2013) to remove frogs, turtles, and other aquatic vertebrates. This measure does not apply to diversion of water from streams and canals and drawdown of impoundments for purposes of Project operations, as they are described in FERC's Final EIS. Aquatic species rescue and salvage shall include the following, or as defined in applicable resource agency permits obtained by NID and approved plans: All species shall be captured using fine mesh or soft material nets and transported to release locations in a bucket, ice chest, or other carrying mechanism, with aeration devices for species that require oxygenated water. Holding time shall be no longer than 45 minutes after capture. Handling of aquatic species shall be minimized to the greatest extent possible. Gloves shall always be worn during rescue and salvage efforts to minimize effects of handling to the greatest extent possible. Prior to entering the stream or initiating any rescue and salvage activities, all gear and equipment shall be decontaminated in a designated location where runoff can be contained. All species, except for invasive aquatic species (for example, bullfrog) shall be relocated to nearby surface waters in low enough numbers to not increase predation, and in appropriate sites to minimize the potential for reentry to the work area. Exclusionary devices (e.g., nets, screens) shall be used on any equipment or materials that have the potential to entrain aquatic species.

MM-AQUATICS-2 No Net Loss of Listed Frog Habitat. Mitigation for permanent impacts on Sierra Nevada yellow-legged frog, or foothill yellow-legged frog aquatic habitat shall be provided at a minimum 1:1 ratio if required in regulatory permits issued through USFWS or CDFW. Mitigation, as required in the applicable regulatory permits obtained by NID from USFWS or CDFW, will satisfy this measure. This measure will be in effect as long as these species are protected under ESA, CESA or other similar federal or state laws.

Implementation of the Fish Rescue and Canal Outages Plan would minimize impacts on special-status aquatic species that may be found in Proposed Project water conveyance structures, and the Erosion and Sediment Control Management Plan would reduce sedimentation of aquatic habitats. In addition, the IVMP would reduce impacts on aquatic species by requiring annual employee training, avoidance of known sensitive biological areas, and restricted pesticide use near suitable habitats (NID 2011). Furthermore, implementation of measures MM-BIO-1 to MM-BIO-3 above would reduce areas of disturbance to the smallest footprint feasible in order to avoid unnecessary encroachment into areas that may support special-status aquatic species, and require biological clearance surveys and monitoring (if deemed necessary). The Erosion and Sediment Control Management Plan requires the implementation of BMPs to reduce degradation of aquatic habitat attributable to sedimentation and pollution.

Special-status Birds

The FERC Project Boundary may provide nesting, wintering, and/or foraging habitat for special-status bird and raptor species, as well as nesting, wintering, and/or foraging habitat for other migratory birds and raptors not identified in the special-status species tables in Appendix A. Special-status birds and raptors with the potential to occur in the FERC Project Boundary include northern goshawk (*Accipiter gentilis*), golden eagle (*Aquila chrysaetos*), willow flycatcher (*Empidonax traillii*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), and California spotted owl (*Strix occidentalis occidentalis*). All

native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under Fish and Game Code Section 3503.

Ground disturbance, as well as any vegetation and tree clearing during the nesting season, could result in direct impacts on nesting birds, if they are present in disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present near activities associated with the Proposed Project.

The Forest Service has established special management areas (Protected Activity Centers, or PACs) for two of the special-status birds with the potential to occur in the FERC Project Boundary: northern goshawk and California spotted owl. According to the Sierra Nevada Forest Plan Amendment (Forest Service 2004), PACs are intended to protect northern goshawk and California spotted owl by providing a buffer between a nest and potential disturbances. PACs California spotted owl overlap with the FERC Project Boundary. For more information on PACs, including their location in relation to the FERC Project Boundary the Final License Application (NID 2011).

The IVMP sets buffers and LOPs for several special-status bird species, specifically northern goshawk, California spotted owl, and willow flycatcher. Focused nesting surveys for these species may also be required through IVMP implementation if nesting status in an area is unknown. Refer to the IVMP for specific LOPs, buffers and survey requirements for each species. In addition to the IVMP, the Bald Eagle Management Plan requires regular surveys for nesting bald eagles and imposes strict buffers and seasonal restrictions on Proposed Project activities in relation to active nests. As shown, the IVMP would minimize impacts on only a select number of special-status species, and the Bald Eagle Management Plan covers only a single species; thus, supplemental measures would be needed to minimize impacts on nesting birds to a less than significant level (NID 2011). For special-status birds not explicitly covered by conditions and implementation plans, there would be a potentially significant impact.

Implementation of the IVMP would minimize impacts on nesting birds by requiring annual employee awareness training and establishing LOPs for some species. Additionally, implementation of MM-BIO-1 to MM-BIO-3 above would reduce areas of disturbance to the smallest footprint feasible in order to avoid unnecessary encroachment into areas that may support nesting birds and require monitoring as needed (i.e., if LOPs and/or buffers cannot be adhered to). Finally, implementation of MM-BIRDS-1 and MM-BIRDS-2 would minimize impacts on nesting birds by requiring preconstruction surveys and active nest avoidance prior to any vegetation removal. Through implementation of MM-BIRDS-1 and MM-BIRDS-2 combined with previously listed measures MM-BIO-1 through MM-BIO-3, Proposed Project impacts to special status bird species would be **less than significant impact with mitigation incorporated**.

Mitigation Measures:

MM-BIRDS-1 Migratory Bird and Raptor Surveys. Vegetation clearing should be conducted outside of the nesting season whenever possible. If activities requiring vegetation clearing or significant ground disturbance occur during the migratory bird nesting season (February 1 to August 31), then surveys to identify active migratory bird and/or raptor nests shall be conducted by a qualified biologist within 7 days prior to activity initiation. Focused surveys shall be performed by a qualified biologist for the purposes of determining the presence/absence of active nest sites within the disturbance area, including access routes. The qualified biologist will determine the area of the surveys.

MM-BIRDS-2 Nest Avoidance. If active nest sites are identified in or adjacent to disturbance areas, a no-disturbance buffer shall be established for all active nest sites prior to commencement of the relevant activities. A no-disturbance buffer constitutes a zone in which activities shall not occur. The size of no-disturbance buffers shall be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest, topographic and other visual barriers, and buffer requirements as defined in the IVMP. No-disturbance buffers will have a minimum size of 50 feet unless a qualified biologist determines site-specific conditions such as topographic or other visual barriers, low disturbance potential, proximity to existing human activity or development, or observed nesting bird behavior deem otherwise. The no-disturbance buffer shall be left in place until a nest is deemed inactive by a qualified biologist or the work is complete, whichever occurs first.

Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

All aquatic resources, wetlands, and riparian areas are considered sensitive natural communities. For this analysis, aquatic resources are defined as water features that are protected under Sections 401 and Section 404 of the Clean Water Act and CDFW, Sections 1600–1603 of the California Fish and Game Code. In addition, the Forest Service considers quaking aspen groves sensitive, and any vegetation communities ranked as S1–S3 by the NatureServe Heritage Program Status Rank are considered sensitive under CEQA (Faber-Langendoen et al. 2012). Impacts on sensitive communities as a result of activities are associated with the Proposed Project are anticipated to be minimal, as activities would be designed to minimize impacts on these resources; however, permanent and temporary adverse impacts on sensitive communities have the potential to occur. Additionally, the change in water flows associated with the Proposed Project have the potential to modify existing riparian vegetation growing along the stream reaches in the FERC Project Boundary; however, the Riparian Vegetation Monitoring Plan is designed to monitor the loss of riparian vegetation (NID 2011). According to this plan, if a significant change or loss is documented as a result of the monitoring, consultation with the appropriate agencies is required to determine whether additional monitoring or adaptive management are necessary to minimize impacts on riparian vegetation.

Implementation of the IVMP would minimize impacts on sensitive communities by requiring annual employee training, avoidance of known sensitive biological areas, and measures to minimize the spread of non-native invasive species into sensitive communities. In addition, any projected impacts on sensitive communities would be discussed during the annual consultation meeting and vegetation management planning. During these steps, LOPs and avoidance measures would be discussed. The IVMP would minimize impacts associated with activities; however, supplemental measures may be needed to minimize impacts on sensitive communities to a less than significant level. To minimize additional potential impacts on sensitive communities, including degradation or direct loss of habitat, implementation of the following measure would be required to reduce the adverse effects below a level of significance.

Permanent or temporary temporal loss of sensitive communities would be considered a significant impact. Any construction activities affecting sensitive communities would be assessed and permitted individually; however, MM-COMMS-1 and MM-COMMS-2 set a minimum standard for no-net-loss of sensitive communities for future activities. Implementation

of MM-COMMS-1 and MM-COMMS-2 would mitigate permanent impacts on sensitive communities, including riparian vegetation, wetlands, and waters. As a result, the Proposed Project would have a **less than significant impact with mitigation incorporated** on sensitive communities.

Mitigation Measures:

MM-COMMS-1 Riparian, Wetlands, and Aquatic Resources Management. Mitigation for permanent impacts on aquatic resources, riparian, and wetland communities shall be provided at a minimum 1:1 ratio to adhere to the no net loss of wetlands rule mandated by USACE. Mitigation may include on-site restoration, in-lieu fee payment, or purchase of mitigation credits at an agency-approved mitigation bank. Mitigation as required in applicable regulatory permits obtained by NID from CDFW, USACE, or the Forest Service may be applied to satisfy this measure. Alternatively, mitigation coordinated with these agencies during the annual consultation meeting may be applied to satisfy this measure. For this measure, aquatic resources are defined as waters protected under Sections 401 and Section 404 of the Clean Water Act and CDFW, Sections 1600–1603 of the California Fish and Game Code.

MM-COMMS-2 No Net Loss of Sensitive Communities. A qualified biologist shall conduct a site review prior to activities that could result in significant vegetation removal to determine whether sensitive communities such as sensitive quaking aspen or Rank S1–S3 communities as defined by Manual of California Vegetation, Second Edition (Sawyer et al. 2009) could be affected. If sensitive communities are determined to be present, then impacts would be avoided to the greatest extent possible. Should permanent impacts on sensitive communities be required for maintenance, mitigation shall be provided at a minimum 1:1 ratio. Mitigation may include on-site restoration, in-lieu fee payment, or purchase of mitigation credits at an agency-approved mitigation bank. Mitigation, including a determination that no mitigation is needed, as required through coordination with the Forest Service, or agreed upon during the annual consultation meeting, will satisfy this measure.

Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

A delineation of aquatic resources in the FERC Project Boundary has not been conducted; however, aquatic resources could be affected by Proposed Project activities if they occur in or near disturbance areas. The FERC Project Boundary includes a variety of aquatic resources such as reservoirs, ponds, wetlands, perennial, and intermittent streams.

Impacts on aquatic resources resulting from Proposed Project activities have not been quantified; however, Proposed Project activities would be designed to avoid impacts on these resources. Despite this, there is the potential for Proposed Project activities to affect federally or state protected aquatic resources, if they occur in or near disturbance areas. Some activities are likely to require in-water work, which could result in permanent or temporary impacts on aquatic resources. Specifically, Proposed Project activities have the potential to affect aquatic resources through habitat alteration, sedimentation, dewatering, direct loss, or other effects to water quality; therefore, a standard of no net loss of federally or state protected waters would be established. Permanent, temporal, and temporary loss of aquatic resources or degradation of water quality would be considered a significant impact. Several of the aforementioned

implementation plans, including the IVMP, the Riparian, Wetlands, and Aquatic Resources Management Plan, and the Erosion and Sediment Control Management Plan, would minimize impacts on aquatic resources by requiring avoidance when possible and implementing measures to reduce degradation of aquatic resources by reducing sedimentation and pollution (NID 2011). However, these plans are focused on avoidance and do not sufficiently mitigate for permanent loss of aquatic resources; thus, implementation of MM-COMMS-1 would reduce the impact to loss of aquatic resources to a less than significant level.

Implementation of the IVMP would minimize impacts on aquatic resources by requiring employee awareness training to train personnel in avoidance, revegetating disturbed areas, and avoiding known biologically sensitive areas including aquatic resources. The Erosion and Sediment Control Management Plan would implement measures to reduce runoff caused by erosion (NID 2011). Additionally, mitigation measures MM-BIO-1 through MM-BIO-3 would reduce areas of disturbance to the smallest footprint feasible to avoid unnecessary encroachment into aquatic resources, require revegetation of disturbed areas to reduce Proposed Project-induced erosion, expand measures in the IVMP to privately owned lands by requiring annual employee training to educate workers on avoidance of aquatic resources, and require implementation of BMPs to limit degradation by erosion, sedimentation, or other harmful materials in aquatic resources. Finally, implementation of MM-COMMS-1 would mitigate for permanent or temporary loss of federally and/or state protected waters. As a result, through implementation of the aforementioned mitigation measures, the Proposed Project would have a **less than significant impact with mitigation incorporated** on state and/or federally protected aquatic resources.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

The streams and riparian corridors in the FERC Project Boundary likely provide migratory corridors and nurseries for fish and wildlife species, even though downstream dams as well as existing Proposed Project dams and other facilities preclude some movement and access to nursery habitat. Proposed Project activities, including changes in flow, are not anticipated to have an adverse effect on native resident fishes and amphibians and their movement patterns as compared with existing conditions, and higher minimum in-stream flows are expected to benefit the movement of these species. Proposed Project activities requiring in-water work are anticipated to be minimal and largely temporary in nature and would not decrease the permeability of these movement corridors.

Proposed Project activities are not expected to affect existing wildlife corridors or increase the ability or permeability of wildlife movement from existing conditions. Forest Service 4(e) Condition No. 39 – Monitor Animal Losses in Canals will require wildlife mortality monitoring in canals, thereby informing the licensee, in consultation with CDFW, if additional mitigation measures are needed to address potential mortalities caused by wildlife trying to cross canals. Agency consultation and adaptive management is required as part of this condition. Forest Service 4(e) Condition No. 40 – Replacement of Wildlife Escape and Wildlife Crossing Facilities would help facilitate wildlife movement by upgrading wildlife crossing facilities. Additionally, Forest Service 4(e) Condition No. 41 Wildlife Crossings – Bowman-Spaulding Canal specifies that upon issuance NID shall maintain three specified crossings for wildlife use. This condition

provides for adaptive management of the crossings throughout their lifespan. BLM 4(e) Condition No. 17 Replacement of Wildlife Escape and Wildlife Crossing Facilities also requires the enhancement of existing structures to maintain their viability.

Implementation of the aforementioned conditions would minimize adverse impacts on aquatic and terrestrial wildlife movement when compared with existing conditions. Therefore, Proposed Project activities would have a **less than significant impact** on the movement of any native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or nursery sites. No mitigation is required.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Proposed Project is consistent with the Placer County General Plan Update (Placer County 2013), the Sierra County General Plan (Sierra County 2012), and the Nevada County General Plan (Nevada County 1996). Each plan specifies policies to protect water resources, wetland and riparian areas, fish and wildlife habitat, wildlife movement corridors, vegetation communities, open space for the preservation of natural resources, threatened and endangered species, and aquatic habitats. In addition, all local plans include specific measures to preserve and protect oak trees and oak woodlands. The Proposed Project activities are consistent with the policies included in these local plans, and no conflicts are anticipated. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no approved habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans within the FERC Project Boundary. As a result, the Proposed Project would not conflict with these plans, and there will be **no impact** and no mitigation is required.

3.8 Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
CR-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
CR-3: Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

3.8.1 Environmental Setting

Cultural resources is a term applied to historic period and precontact archaeological sites; historical buildings, objects, structures, records, manuscripts, or places; and places of traditional cultural or religious importance, regardless of their eligibility for listing on national, state, or local registers. Under CEQA Sections 21084.1 and 21083.2, potential adverse impacts on cultural resources that are listed on or eligible for listing on the California Register of Historical Resources (CRHR), or that are considered unique or significant regardless of their CRHR status as determined by the lead CEQA agency, must be taken into account. CRHR listed or eligible resources, termed *historical resources*, include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (Pub. Resources Code, § 5020.1[j]).

Properties that are listed in or eligible for listing in the CRHR include both precontact and historic period resources, are of local significance, include some California State Historical Landmarks and California Points of Historical Interest, or are resources that have been listed in or formally determined to be eligible for listing in the National Register of Historic Places (NRHP) (See also Pub. Resources Code, § 5024.1).

To help inform identification of cultural resources within the Proposed FERC Project Boundary, NID conducted archaeological and historical built environment resources investigations between 2008 and 2011 as part of the FERC relicensing. The studies were documented in four cultural resources inventory and NRHP evaluation reports (Baker 2010, Davis-King 2011, Lloyd et al. 2011, Risse et al. 2011, Simons et al. 2012). These studies included background and archival research, field surveys, NRHP evaluations of certain resources, and reporting.

The studies documented 171 cultural resources within the overall footprint of the FERC Project Boundary. The cultural resources identified during these studies included 24 historical built environment resources, of which two were found eligible for inclusion on the NRHP and 22 were

found ineligible. The remaining 147 resources consist of nine precontact archaeological sites, 97 historic-era archaeological sites, seven multicomponent (containing historic-era and precontact components) archaeological sites, and 34 isolated archaeological finds. Of these 147 archaeological resources, 110 have been determined ineligible for the NRHP, 36 remain unevaluated for the NRHP, and one resource was not relocated and its eligibility for inclusion in the NRHP was not considered during relicensing studies. Additionally, a Traditional Cultural Properties (TCP) study was completed in 2011 and found that there were no TCPs in the FERC Project Boundary.

Table 3.8-1. Cultural Resources within the Proposed FERC Project Boundary and their NRHP eligibility

Cultural Resource Type	Eligible	Ineligible	Unevaluated	N/A *	Total Number of Resources
Archaeological					
Historic-Era Sites	-	73	23	1	97
Precontact Sites	-	1	8	-	9
Multicomponent Sites	-	2	5	-	7
Isolated Finds	-	34	-	-	34
Tribal Resources					
TCPs	-	-	-	-	0
Built Environment					
Historic-Era	2	22	-	-	24
Total Number of Resources	2	132	36	1	171

* One site, FS 05-27-55-325, was not relocated at the time of the field survey, thus no NRHP consideration was required.

The State Historic Preservation Officer (SHPO) concurred with the findings of the cultural resources inventory and NRHP evaluation reports in letters dated November 18, 2010, October 31, 2012, and October 9, 2013. As the SHPO does not, typically, concur on CRHR eligibility recommendations, the cultural resources identified during the FERC studies and submitted to the SHPO were evaluated specifically for listing in the NRHP. Importantly, resources listed in or determined to be eligible for listing in the NRHP are automatically listed in or eligible for the CRHR. Although it is possible to identify resources that are eligible for listing in the CRHR but not in the NRHP, the significance criteria for both NRHP and CRHR eligibility are similar enough that determinations of eligibilities for the NRHP would also apply for the CRHR. For purposes of this document, the NRHP eligibility determinations will be assumed to also be the CRHR eligibility determinations.

Cultural history is often of great interest to the public. However, locational and other information about historical resources can result in irreparable vandalism or other damages to these resources. As a result, various state and federal regulations have been passed that allow for restrictions on confidential site location information and other information that could result in damage to these resources, including CEQA, Section 9 of the Archaeological Resources Protection Act of 1979 (ARPA; for federal lands), and Section 304 of the National Historic

Preservation Act of 1966 (54 U.S.C. §307103), to name a few. Thus, the final technical reports of findings for the completed cultural resources studies are confidential, were filed with FERC as privileged, and are provided only on a need-to-know basis. Public summaries that describe the methods and results of these studies, but that omit any privileged information, are included in the FLA (NID 2011).

Historic Properties Management Plan

Activities associated with the Proposed Project have the potential to affect known and unknown cultural resources (for example, unrecorded resources that could be discovered during the term of the proposed new license) in the Proposed FERC Project Boundary that are potentially eligible for inclusion in the NRHP and/or CRHR. As part of the relicensing effort, NID developed a Historic Properties Management Plan (HPMP) (NID 2012) to guide the management of precontact and historic-period properties that are listed in, eligible for listing in, or that are unevaluated for listing in the NRHP, during the term of the proposed new license. The HPMP provides the procedures required to comply with federal and state laws and regulations and to conduct consultation with tribes, agencies, and SHPO for the continued management of historic properties under the proposed new license. These measures include avoidance, protection, monitoring, and mitigation measures. Properties that have not been evaluated for listing on the NRHP are to be managed as if they are eligible in the same manner as listed or eligible properties that have been formally evaluated. The HPMP was developed in consultation with Native American tribes, Tahoe National Forest, BLM, and SHPO.

3.8.2 Impact Analysis

Impact CR-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

A substantial adverse change in the significance of a historical resource is defined in section 15064.5(b)(1) of the CEQA Guidelines as the “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.”

Of the 171 cultural resources identified by the relicensing studies within the FERC Project Boundary, two resources are listed on or eligible for listing on the NRHP and are, therefore, eligible for listing on the CRHR. Another 36 resources have not been evaluated for the NRHP. Moreover, architectural and engineered facilities and historic-era archaeological sites (for example, a trash dump dating to the 1970s) that were not 45 to 50 years of age at the time of the studies have reached the 50-year age criterion for consideration of effects and potential listing on the CRHR and NRHP, or will reach the 50-year age criterion after the new FERC license are issued. These resources will require formal recordation using the State Department of Parks and Recreation (DPR) 523 forms and an assessment of each site’s integrity to determine whether these resources are affected by, or will potentially be affected, by operations and maintenance associated with the Proposed Project. In accordance with the terms of the HPMP, unevaluated resources will be managed as if they are NRHP eligible through avoidance, as feasible. Avoidance means that no activities associated with the Proposed Project may occur at or to these resources not evaluated for the NRHP and/or the CRHR. This applies to activities within the boundaries of known or potential historical resources as well, including any defined buffer zones. Avoidance further means that the boundaries for potentially disturbing or

destructive activities may need to be modified, redesigned, or eliminated to properly avoid historical resources. Buffer zones may be established around resources to ensure added protection from ground-disturbing activities if deemed necessary. Avoidance may include rerouting trails or roads to avoid resources, gating access roads to particularly sensitive areas to keep visitors away, or other means of restricting public access and disturbances associated with the Proposed Project to protect resources. Avoidance of historical buildings or structures may include not replacing or modifying characteristics that potentially make them eligible for the NRHP or CRHR. Implementing these avoidance measures ensures the known or potential historical resources will not be impacted by activities or public use and access associated with the Proposed Project, and that the Proposed Project will therefore not cause a substantial adverse change in the significance of a historical resource or require mitigation measures.

Within the FERC Project Boundary, the Bowman House and the French Lake Control House are both individually eligible for listing on the NRHP and the CRHR. In following the measures of the HPMP, prior NRHP evaluations will be reviewed to ensure that the evaluations are still appropriate and to ensure that the Proposed Project's potential impacts to potential historical resources are avoided or minimized. Operations and maintenance within the FERC Project Boundary are expected to continue as they have been conducted historically. Unevaluated resources that have reached 50 years of age since the previous studies were conducted will be evaluated when Proposed Project activities could potentially disturb or modify these resources. Effects of continued operations and maintenance to newly and previously evaluated resources that are eligible for listing on the NRHP and/or the CRHR will be assessed under the HPMP when Project activities are identified that could affect such resources and/or when a new resource is identified, in order to determine the appropriate treatment for managing the resource under the new license.

When impacts to unevaluated resources are unavoidable, they will be evaluated for the NRHP and/or the CRHR through a testing or evaluation program (e.g., subsurface testing, archival research). Included in the HPMP, is the Historic Properties Evaluation and Treatment Plan (HPETP). The HPETP (1) specifies the research themes and questions to be addressed through the recovery of archaeological, built environment, and traditional cultural property data; (2) specifies the methods to be used in fieldwork and analysis, and explains how these methods are relevant to the research design included in the HPETP; (3) specifies the methods to be used in data management and data dissemination; (4) indicates how recovered materials and records will be curated; and (5) provides for final reporting of the work and curation of all materials and records.

Any resources determined eligible for the NRHP or CRHR that cannot be avoided by activities associated with the Proposed Project will follow procedure established in the HPETP to reduce potentially significant impacts. The HPETP also details the resource-specific measures to be conducted that are unique to each resource that may undergo evaluation or mitigation as well as providing the steps necessary to implement mitigation based on the NRHP and CRHR criteria under which a resource is found eligible. The processes may include data recovery excavations for historic-era archaeological sites, archival research of historical buildings and structures, signage, and other measures deemed appropriate based on the type of resources being addressed and as determined through consultation with consulting parties (i.e., the Forest Service, BLM, Native American Tribes, and SHPO). The HPETP methods and protocols have been compiled in accordance with the principles, standards, and guidance contained in

Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (USDOI 1983), the Advisory Council on Historic Preservation's (ACHP's) Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites (ACHP 1999), guidance offered by SHPO, and as appropriate, recommendations from the Forest Service, BLM, and Native American Tribes. Implementation of these protocols would ensure that planned, unavoidable impacts from the Proposed Project to historical resources are reduced to a less than significant level before impact-causing activities are conducted. As such, those impacts would not result in a substantial adverse change to the significance of a historical resource or require mitigation measures, as the HPMP is already a component of the Proposed Project.

NID proposes to add a new powerhouse associated with the Rollins Development, add five new streamflow gauges for monitoring compliance, and add several new recreation-related structures. NID will have to consider potential impacts to historical resources following measures laid out in the HPMP, including monitoring around historical resources. As well, if NID proposes to rehabilitate, restore, relocate, reconstruct, or otherwise modify any historical resource, or build new construction within the viewshed of an NRHP or CRHR eligible or listed historic district, NID will submit construction plans for buildings and structures to the SHPO for review and comment, as is required by the HPMP.

Proposed Project operation or maintenance, erosion, and recreation could expose and damage previously unidentified cultural resources that could be historical resources. In addition, previously identified resources could have new components or characteristics revealed over the course of the new license that were previously unknown. The HPMP provides measures to address such inadvertent discoveries (i.e., the unexpected exposure of previously unknown and unrecorded resources) during the terms of the new license. These measures require that all work in the immediate area of the discovery cease immediately and that all materials remain in place until the discovery can be examined by a qualified archaeologist to determine whether the find is an isolated artifact, an archaeological site, other resource type, or a finding of no concern (i.e., not 45-50 years of age). Isolated historic-era artifacts and archaeological sites unexpectedly discovered are to be documented on DPR 523 forms and avoided by further ground-disturbance. The SHPO, BLM, Forest Service, and consulting Tribes will be notified of the inadvertent discovery within 48 hours of the discovery, in accordance with 36 CFR 800.13(b)(3). The notification will describe any assessment of NRHP eligibility (formal or informal), the recommended actions to be undertaken to resolve potential adverse effects, and to seek consultation on the recommendations or other ways to avoid, minimize, or mitigate potential impacts to the discoveries. Per 36 CFR 800.13(b)(3), the Tribes and SHPO will have 48 hours to respond to the notification. If avoidance is not feasible, the measures to address unavoidable impacts will be implemented as provided for in the HPMP and HPETP and as discussed above.

Minor ground disturbances within the FERC Project Boundary related to modifications, vegetation management, road maintenance, construction, and use, recreation, or emergency repairs to flow releases, and that may be required for routine maintenance activities have the potential to cause substantial adverse changes to currently unidentified, buried historic-era archaeological sites and known archaeological sites in close proximity to these activity areas. Archaeological and/or tribal monitoring will be implemented in accordance with the measures provided in the HPMP. Regular monitoring will provide feedback concerning the condition of

historical resources, confirming that the resources have been avoided as planned, or signaling when additional management measures may be called for. All potential historical resources located within the FERC Project Boundary for which eligibility has not yet been determined will be monitored by a qualified, professional archaeologist. The frequency of monitoring shall be based on considerations of accessibility, site type, and proximity to features and recreational use areas associated with the Proposed Project and is the product of consultation with Tribes and agencies, as appropriate. If a previously recorded site is determined ineligible, it will no longer be monitored or managed through the HPMP. However, if a previously unrecorded site is identified, it will be assumed eligible and, in consultation with Tribes and agencies, avoided, and assigned a monitoring schedule.

In addition to regular site-specific monitoring, archaeological and/or tribal monitoring may be appropriate in cases of ground disturbance within 30 feet of NRHP- or CRHR-eligible or unevaluated resources.

An annual monitoring report summarizing the results of all monitoring activities during the preceding calendar year will be prepared and distributed to consulting parties by March 15 of each year. The report shall include written descriptions of any disturbances that were observed at each site monitored. An annual cultural resources consultation meeting with consulting Tribes, land-managing agencies, and SHPO will also be held in March of each year, in part to discuss the monitoring report. Based on the results of monitoring presented in the report, the meeting will include a discussion of any proposals to increase or decrease monitoring frequency in response to recent site conditions. Any agreed upon changes in site monitoring frequency will be appended to the beginning of the HPMP monitoring plan and submitted to Tribes and agencies (as appropriate) as an errata sheet.

The HPMP further provides for annual cultural resources education and sensitivity training for NID staff and contractors, including all heavy equipment operators and other ground crew members working on the Proposed Project. Training personnel in the procedures required to avoid unplanned impacts to cultural resources will help to avoid inadvertent disturbances, allow for the evaluation and potential mitigation of impacts prior to historical resources being disturbed or destroyed, thereby resulting in the Proposed Project having a **less than significant impact** to historical resources.

Impact CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

As provided for in section 15064.5(c)(1) of the CEQA Guidelines, a lead agency shall first determine whether an archaeological site is a historical resource, as defined at section 15064.5(a) of the CEQA Guidelines, when it is found that a project would affect that resource. According to section 15064.5(c)(3) of the CEQA Guidelines, “if an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2.” If archaeological resources are determined to be either historical resources or unique archaeological resources, then the effects of the project on those resources must be analyzed.

The cultural resources studies completed for the relicensing identified 147 archaeological sites within the FERC Project Boundary, for which the NRHP/CRHR eligibility of 36 of these sites has

not been determined. The remaining archaeological sites are either ineligible (N = 110) or were not considered as they could not be located (N = 1). In accordance with the terms of the HPMP, unevaluated archaeological sites will be managed as if they are NRHP eligible through avoidance, if feasible. Avoidance means that no activities associated with ground-disturbing activities associated with the Proposed Project may affect these unevaluated archaeological sites, nor shall any ground-disturbing activities occur within the boundaries of known or potential historical resources, including any defined buffer zones. Avoidance further means that the boundaries for ground-disturbing activities may need to be modified, redesigned, or eliminated to properly avoid archaeological sites. Buffer zones may be established around archaeological sites to ensure added protection if deemed necessary. Moreover, avoidance may include rerouting trails or roads to avoid archaeological sites, gating access roads to particularly sensitive areas to keep visitors away, or other means of restricting public access and disturbances to protect archaeological sites. Implementing these avoidance measures ensures the archaeological sites will not be impacted by the ground-disturbing activities or public use and access, and that the Proposed Project will therefore not cause a substantial adverse change in the significance of an archaeological resource that is determined to be unique or is a historical resource or potential historical resource, or require mitigation measures.

Additionally, there is the potential for currently unidentified archaeological sites to be discovered in the FERC Project Boundary during the term of the proposed new license. Operation or maintenance of the Proposed Project, erosion, and recreation could expose and damage previously unidentified cultural resources. In addition, known archaeological resources may reveal characteristics that were previously unknown if new portions of these sites are exposed. The HPMP provides the measures to address inadvertent discoveries (i.e., the unexpected exposure of previously unknown and unrecorded archaeological sites) during the terms of the new license. These measures require that all work in the immediate area of the discovery cease immediately and that all artifacts remain in place until the discovery can be examined by a qualified archaeologist to determine whether the find is an isolated artifact or an archaeological site. Isolated artifacts and archaeological sites unexpectedly discovered are to be documented on the DPR 523 forms and avoided by further ground-disturbance. The SHPO, BLM, Forest Service, and consulting Tribes will be notified of the inadvertent discovery within 48 hours of the discovery, in accordance with 36 CFR 800.13(b)(3). The notification will describe any assessment of NRHP eligibility (formal or informal), the recommended actions to be undertaken to resolve potential adverse effects, and to seek consultation on the recommendations or other ways to avoid, minimize, or mitigate potential impacts to the discoveries. Per 36 CFR 800.13(b)(3), the Tribes and SHPO will have 48 hours to respond to the notification. If avoidance is not feasible, the measures to address unavoidable impacts will be implemented as provided for in the HPMP and HPETP.

Avoidance and protection are not always possible. When planned impacts to archaeological sites are unavoidable, unevaluated resources will be evaluated for the NRHP through a testing or evaluation program (e.g., subsurface testing, archival research). Any sites determined eligible for the NRHP or CRHR that cannot be avoided by activities associated with the Proposed Project will be mitigated to address significant impacts. The approaches and methods detailed in the HPETP will be used for both NRHP evaluation and mitigation at archaeological sites, including test excavation for NRHP evaluations, data recovery excavations, archival research, signage, and other measures deemed appropriate to the type of resource being evaluated and the type of impacts being mitigated. The HPETP details site-specific measures that are unique

to each site that may undergo evaluation or mitigation as well as providing the steps necessary to implement mitigation based on the NRHP and CRHR criteria under which a site is found eligible. The HPETP methods and protocols have been compiled in accordance with the principles, standards, and guidance contained in Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (USDOI 1983), the Advisory Council on Historic Preservation's (ACHP's) Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites (ACHP 1999), guidance offered by SHPO, and as appropriate, recommendations from the Forest Service, BLM, and Native Americans Tribes. Implementation of these methods and protocols would ensure that planned, unavoidable impacts on archaeological sites from the Proposed Project will be addressed prior to impacting the sites, and the Proposed Project therefore will not cause a substantial adverse change in the significance of an archaeological resource or require mitigation measures beyond what is already required by the HPMP which is a component of the Proposed Project.

Minor ground disturbances within the FERC Project Boundary related to modifications, vegetation management, road maintenance, construction, and use, recreation, or emergency repairs to flow releases, and that may be required for routine maintenance activities have the potential to cause substantial adverse changes to currently unidentified, buried archaeological sites and known archaeological sites in close proximity to these activity areas. Archaeological and/or tribal monitoring will be implemented in accordance with the measures provided in the HPMP. Regular monitoring will provide feedback concerning the condition of historical resources, confirming that sites have been avoided as planned, or signaling when additional management measures may be called for. All potential historical resources located within the FERC Project Boundary for which eligibility has not yet been determined will be monitored by a qualified, professional archaeologist. The frequency of monitoring shall be based on considerations of accessibility, site type, and proximity to features and recreational use areas associated with the Proposed Project and is the product of consultation with Tribes and agencies, as appropriate. If a previously recorded archaeological site is determined ineligible, it will no longer be monitored or managed through the HPMP. However, if a previously unrecorded site is identified, it will be assumed eligible and avoided and, in consultation with Tribes and agencies, assigned a monitoring schedule.

In addition to regular site-specific monitoring, archaeological and/or tribal monitoring may be appropriate in cases of ground disturbance within 30 feet of NRHP- or CRHR eligible or unevaluated resources. Anytime an archaeologist monitors ground disturbing activities in proximity to precontact resources, Tribes shall be invited to participate.

An annual report summarizing the results of all monitoring activities during the preceding calendar year will be prepared and distributed to consulting parties by March 15 of each year. The report shall include written descriptions of any disturbances that were observed at each site monitored. An annual cultural resources consultation meeting with Tribes, land-managing agencies, and SHPO will also be held in March of each year, in part to discuss the monitoring report. Based on the results of monitoring presented in the report, the meeting will include a discussion of any proposals to increase or decrease monitoring frequency in response to recent site conditions. Any agreed upon changes in site monitoring frequency will be appended to the beginning of the HPMP monitoring plan and submitted to Tribes and agencies (as appropriate) as an errata sheet.

The HPMP further provides for annual cultural resources education and sensitivity training for NID staff and contractors, including all heavy equipment operators and other ground crew members working on the Proposed Project. Training personnel in the procedures required to avoid unplanned impacts to archaeological resources will help to avoid inadvertent disturbances and allow for the evaluation and potential mitigation of impacts prior to any disturbances or destruction, thereby resulting in the Proposed Project having a **less than significant impact** on archaeological resources, and no mitigation is required.

Impact CR-3: Disturb any human remains, including those interred outside of dedicated cemeteries?

Section 15064.5(d) of the CEQA Guidelines requires that the Proposed Project addresses the potential for human remains, particularly Native American human remains, to be present within the FERC Project Boundary. Consistent with state law, including section 7050.5 of the Health and Safety Code and section 5097.98 of the Public Resources Code, section 15064.5(d) and (e) of the CEQA Guidelines require the identification of known or likely burials or other locations of human remains and adherence to applicable state laws and regulations for the appropriate disposition of human remains, including in the event of accidental discovery. No human remains were identified or discovered during any of the relicensing studies. However, given the culturally sensitive nature of the lands within the Proposed Project, and the presence of precontact occupation sites, it is possible that human remains could be discovered during the term of the proposed new license. Thus, the measures provided in the HPMP to address the discovery and protection of human remains, in accordance with applicable state and federal laws, will be employed if human remains are encountered. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

3.9 Energy

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
ENERGY-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
ENERGY-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.9.1 Environmental Setting

The Proposed Project includes renewable electrical generation facilities in the form of hydroelectric powerhouses. These contribute to the local electrical grid and provide operational power for the Proposed Project. Operations and maintenance of the Proposed Project would be consistent with existing conditions and would involve no change to current operations besides the expansion of generation capacity with the development of Rollins Powerhouse No. 2. As such, this analysis focuses on the fuel and electricity required for construction of the Proposed Project, including transportation to the FERC Project Boundary, as necessary.

3.9.2 Impact Analysis

Impact ENERGY-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

During construction, energy consumption in the form of transportation fuel (gasoline and diesel) would result from operation of construction equipment, hauling trucks, and worker commute vehicles. Most of this work would be consistent with existing maintenance and operations and would represent a continuous use of such energy consumption. New developments that may exceed current maintenance include, but are not limited to, streamflow gages, primitive campsites, information kiosks, gravel parking spaces, multiple restrooms (vault and flush), road upgrades, parking lot development, installation of boat ramps, and utility hookups. These activities would require short-term and generally small expenditures of energy that slightly exceed existing operations and maintenance conditions. Under the proposed Chicago Park Powerhouse Motoring measure, NID would make a good faith effort to avoid non-routine planned outages of the Chicago Park powerhouse from May 1 through September 15 each year.

Construction details are not available for the Rollins Powerhouse No. 2 at the time of this analysis. Construction of the new powerhouse may require a significant expenditure of energy; however, once in operation, the Rollins Powerhouse No. 2 would supplement the existing

sustainable energy production at the Rollins Development. When construction details are available, additional impact analysis may be required.

The Proposed Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact ENERGY-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Proposed Project would not significantly increase energy use or conflict with a state or local plan for renewable energy or energy efficiency. The Proposed Project includes the installation of Rollins Powerhouse No. 2, which would yield up to 11.4 MW of additional energy from renewable sources. As such, the Proposed Project would support renewable energy plans and would have no adverse impact on such plans. Therefore, **no impact** would occur, and no mitigation is required.

3.10 Geology/Soils

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
GEO-2: Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
GEO-4: Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?	☐	☐	☐	☒
GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.10.1 Environmental Setting

The Proposed Project is located in the Sierra Nevada mountains and foothills. The area is expected to experience low to moderate seismic activity; the closest areas of such activity are near Lake Oroville, northwest of the Proposed Project, and near Lake Tahoe, to the Proposed

Project's southeast. As discussed in FEIS Section 3.3.1, *Geology and Soils*, streams affected by the Proposed Project are frequently carved into steep canyons and are often characterized by exposed bedrock, most stream beds are dominated by gravel to cobble-size material. The majority of impacted streams do not erode easily and accumulate little fine sediment. The existing Yuba and Bear River Basins drain the northwestern Sierra Nevada through a series of deep canyons separated by high, steep-sided ridges. This series of hard rock and deep canyons results in limited erosion and relatively clear runoff with low turbidity.

A common concern in projects is expansive soil, which are soils that shrink and swell with changes in moisture content as the clay minerals in these soils expand and contract. The FERC Project Boundary is primarily located in the Sierra Nevada Mountains, on primarily rocky and loamy soils (USDA 2025). Clay minerals involved in such expansion or contraction are uncommon in this area. For full information on the Geology and Soils present in the FERC Project Boundary, please refer to the FEIS Section 3.3.1, *Geology and Soils – Affected Environment for the Yuba-Bear Project*.

3.10.2 Impact Analysis

NID filed an Erosion and Sediment Control and Management Plan on April 11, 2014. Upon acceptance of a new license and implementation of the Proposed Project, NID would implement this plan as conditioned by the Forest Service and BLM. The plan includes measures to identify, assess, and monitor erosion sites. It further provides a schedule for treatments, standard controls, and protocols to reduce erosion and sediment control.

NID would also implement the Canal Point Release Plan, as conditioned by the Forest Service and BLM. The Canal Point Release Plan includes assessment of: landslide hazards, erosive conditions at sites of previous canal breaches, project drainage facilities used as emergency and maintenance release; it also includes improvements to those facilities to minimize erosion and related adverse impacts and measures to reduce risk of slope failure associated with the Proposed Project.

Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?

The Proposed Project is not located in an earthquake, liquefaction or landslide zone (CGS 2025). As noted in Section 3.10.1, Environmental Setting, the nearest faults are located northwest of the Proposed Project, near Lake Oroville, and southeast on the southern edge of Lake Tahoe. Further, while there are expansions of the FERC Project Boundary and additional infrastructure being added, the Proposed Project includes no change in land use within the FERC Project Boundary and therefore, operations would not increase the chance of any incident listed in this threshold. As such, there is no potential adverse effect caused or exacerbated by the Proposed Project. Therefore, the Proposed Project would result in **no impact**, and no mitigation is required.

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil?

Several of the recreation upgrades and road rehabilitation activities included in the Proposed Project would result in ground disturbance that could displace soils; however, implementation of the Erosion and Sediment Control Management Plan and the Canal Release Point Plan would reduce construction effects. Therefore, the Proposed Project would not result in substantial soil erosion or the loss of topsoil. As a result, Proposed Project would result in a **less than significant impact** and no mitigation is required.

Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The FERC Project Boundary does not include any portion of a liquefaction zone, and chances of lateral spreading and subsidence within the FERC Project Boundary are minimal. While landslides may occur within the FERC Project Boundary, any risk of them would not be exacerbated by implementation of the Proposed Project. Therefore, the Proposed Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact GEO-4: Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?

As discussed in 3.10.1, *Environmental Setting*, expansive soils are uncommon within the FERC Project Boundary. Construction details are not available for the Rollins Powerhouse No. 2 at the time of this analysis. Construction of the new powerhouse may require additional excavation and the site may need additional analysis to confirm that expansive soils are not present. When construction details are available, additional impact analysis may be required. As such, expansive soils would have **no impact** on the Proposed Project, and no mitigation is required.

Impact GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Much of the FERC Project Boundary contains low-permeability soils, steep slopes, and soil depth which complicates the effective use of septic systems in these areas (Harland Bartholomew & Associates, Inc. 1991) (Sierra County 2014). Construction of the recreation upgrades and continued operation of the Proposed Project would not require significant expansion of septic systems, neither would it create additional demand for such infrastructure nearby. Therefore, the Proposed Project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. As such, the Proposed Project would have **no impact** on septic systems service, and no mitigation is required.

Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The FEIS did not address paleontological resources. CEQA includes in its definition of historical

resources “...any object [or] site ...that has yielded or may be likely to yield information important in prehistory...” (14 California Code of Regulations Section 15064.5[a][3]), which is typically interpreted as including fossils and other paleontological resources. More specifically, the destruction of a “...unique paleontological resource or site or unique geologic feature...” constitutes a significant impact under CEQA pursuant to CEQA Guidelines in Appendix G.

Pleistocene or older (older than 11,000 years) continental sedimentary deposits are considered to have a high paleontological potential, while Holocene-age deposits (less than 10,000 years old) are generally considered to have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms.

Metamorphic and igneous rocks have low paleontological potential, either because they formed beneath the earth's surface or because they have been altered under high heat and pressures, chaotically mixed, or severely fractured.

As noted in FEIS Section 3.3.5.1, *Regional Recreational Resources*, the Proposed Project is located in northern California along the western slope of the Sierra Nevada geomorphic province in Sierra, Nevada and Placer Counties. Further, as discussed in FEIS Section 3.3.1.1.1, *Geologic and Physiographic Setting*, the bedrock geology within the Proposed Project vicinity is mainly composed of Paleozoic metasediments and metavolcanics (i.e., Shoo-fly and Calaveras formations), Paleozoic and Mesozoic granitic rocks (i.e., Bowman Lake and Sierra Nevada batholiths and Yuba River pluton), and a Mesozoic ophiolite complex (i.e., Smartville complex). These resources are generally considered to have high paleontological potential.

Records of paleontological finds maintained by the University of California Museum of Paleontology state that there are 64 localities at which fossil remains have been found in Placer County. In addition, there are 62 localities of fossil remains in Nevada County and 19 localities in Sierra County (UCMP 2025). Across the counties, these localities occur primarily in the lone geologic formation. These records do not indicate whether fossils occur within the Proposed Project.

Although much of the Proposed Project has been previously disturbed, unique paleontological or geologic features could be discovered during subsurface work, which would be considered a potentially significant impact. Therefore, **MM-GEO-1** (described below) would be implemented to minimize impacts resulting from the potential for discovery of buried paleontological resources during Proposed Project construction activities.

Long-term operations activities associated with the Proposed Project may involve ground disturbing activities on previously disturbed or undisturbed land and may involve subsurface ground disturbance. Therefore, operations of the Proposed Project could have the potential to encounter unique paleontological or geologic resources, although the possibility is low.

Therefore, the Proposed Project would have a **less than significant impact with mitigation incorporated** on unique paleontological resources or sites or unique geologic features.

Mitigation Measure:

MM-GEO-1 – Discovery of Paleontological Resources. Before the start of construction activities, construction personnel involved with earth-moving activities would be informed of the proper notification procedures if fossils are encountered. If paleontological resources are encountered during construction activities, work shall stop within a radius of 50-ft of the find, and

a qualified paleontologist shall be contacted to assess the find and to make recommendations on its disposition. Recommendations may include but are not limited to preservation in place or excavation and ultimate curation by an established, accredited museum repository. Work shall not resume at the site of the encounter until the disposition of the finding is completed and verified by the paleontologist.

3.11 Greenhouse Gas Emissions

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.11.1 Environmental Setting

California's efforts devoted to GHG emissions reductions and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Public agencies use significance thresholds to indicate how they plan to evaluate and characterize the severity of various environmental impacts that could be associated with discretionary projects that they review. Significance thresholds are also used to help identify the level of mitigation needed to reduce a potentially significant impact to a less than significant level and to determine what type of an environmental document should be prepared for a project—a negative declaration, an MND, or an environmental impact report.

The Proposed Project is located in Nevada, Placer, and Sierra counties. Facilities within Placer County are within the PCAPCD, while facilities within Nevada and Sierra counties are within the NSAQMD.

The PCAPCD CEQA Handbook defines a significance threshold of 1,100 metric tons (MT) of carbon dioxide equivalent (CO₂e) for the operational phase of land use projects. As routine maintenance activities are temporary, no significance threshold was applied to their potential impacts.

The NSAQMD CEQA Guidelines do not suggest a GHG emission threshold. Instead, the guidelines refer the reader to the California Air Pollution Control Officers Association (CAPCOA) guidance. CAPCOA has not suggested a GHG threshold of significance but presented a rationale for a 900 MT of CO₂e per year CEQA threshold in its 2010 guidance document, Quantifying Greenhouse Gas Mitigation Measures. Consistent with Nevada and Sierra counties, no significance threshold is recommended for temporary maintenance impacts.

GHG emissions generated by the Proposed Project would be primarily in the form of CO₂ and CH₄ from maintenance equipment and haul and commute vehicle exhaust. Operational GHG

emissions from routine maintenance and existing operations of the Proposed Project would not significantly increase over existing conditions.

3.11.2 Impact Analysis

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

For the purposes of this analysis, the impact of a project's direct or indirect GHG emissions would be considered significant if they would prevent implementation or attainment of existing GHG reduction strategies or air quality goals. Table 3.11-1 shows the average daily GHG emissions for each construction activity category.

Table 3.11-1. Average GHG Emissions

	Placer County Improvement	Nevada County Improvement	Nevada County Major Rehabilitation	Nevada County Major Boat Launch
GHG Emissions (lbs/day)	615.200	617.500	1507.000	1559.000
GHG Emissions (MT/year)	112.2705	112.6885	275.0405	284.5735

Typically, emissions are annualized over the lifetimes of the projects evaluated, which for the Proposed Project would be the 20-year construction timeline. The annualized construction emissions would be approximately 10,558.61 MTCO₂e. The total GHG emissions over the 20 year construction period would be approximately 211,172.21 MTCO₂e.

Routine maintenance-related GHG emissions would be associated with engine exhaust from construction equipment, haul trucks, and worker commute trips. However, routine maintenance activities and ongoing operations would not change GHG emissions over existing conditions. Further, as noted above, no thresholds for construction GHG emissions have been set by the PCAPCD and NSAQMD. Therefore, there would be a less than significant impact from maintenance-related emissions.

Therefore, the Proposed Project would be consistent with the applicable GHG emission reduction strategies identified by the State's Climate Action Plan and the Climate Action Team. As a result, the Proposed Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Neither PCAPCD nor NSAQMD have adopted any thresholds of significance for GHG emissions. The latest 2022 Scoping Plan for the State of California sets GHG reduction targets and strategies to achieve carbon neutrality by 2045. The Proposed Project would provide local generation through hydropower and therefore would be consistent with any local climate action plans, whether already implemented or in development.

Construction GHG emissions would be temporary and intermittent and would cease upon completion of work. In addition to being cumulatively minimal, because the construction activities of the Project would occur over a 20-year period, the impact related to GHG emissions

would be further reduced when considered on a year-to-year basis. Operational GHG emissions would not be increased significantly over existing conditions due to the Proposed Project. Implementation of the Proposed Project would not generate GHG emissions that result in a significant environmental impact or conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing emissions of GHGs. Therefore, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

3.12 Hazards & Hazardous Materials

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☒	☐
HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

3.12.1 Environmental Setting

Activities within the FERC Project Boundary would involve minor use of common construction materials such as fuel, oil and grease, surfactants, and herbicides during construction activities. It is not anticipated that there would be changes in potential hazardous materials used during operations or maintenance as a result of implementation of the Proposed Project. Waste from maintenance activities is not anticipated to be hazardous; however, if hazardous materials were

encountered, they would be disposed of at approved facilities in accordance with all applicable state and federal regulations.

3.12.2 Impact Analysis

NID proposes to develop a Hazardous Substance Management Plan approved by the Forest Service and BLM for oil and hazardous substances storage and spill prevention and cleanup on federal lands within the FERC Project Boundary. NID proposes to file the plan with FERC within 1 year of license issuance or prior to undertaking activities on federal lands. The development of a Hazardous Substance Management Plan is consistent with 4(e) license requirements Forest Service condition 21 and BLM condition 52 for the Proposed Project.

NID filed a Fire Prevention and Response Plan on Federal Land on April 12, 2011, and revised versions of the plan on June 18, 2012, and November 21, 2013. NID proposes to implement the plan upon Commission approval. The plan addresses fire prevention, protection, response, reporting, and investigation at project facilities on federal lands within the FERC Project Boundary. The implementation of the Fire Prevention and Response Plan is consistent with Forest Service 4(e) condition 62 and BLM 4(e) condition 40 license requirements for the Proposed Project.

NID proposes to implement its March 2013 Integrated Vegetation Management Plan at the Proposed Project. The plan would be implemented on federal lands and combines all measures related to the management of terrestrial vegetation at project facilities and recreation sites and includes control of non-native invasive species, provisions for special-status species, provisions for pesticide use, and annual training, management, and reporting. The implementation of the Integrated Vegetation and Non-native Invasive Plant Management Plan is consistent with 4(e) license requirement Forest Service condition 38 and BLM condition 15.

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Activities within the FERC Project Boundary would use fuel for maintenance and operation of vehicles, and herbicide for the management of noxious weeds in the IVMP (NID 2013). However, the transport, use, or disposal of these materials would not be a change from current conditions. Waste is not anticipated to be hazardous; however, if hazardous materials are encountered, they would be transported and disposed of at approved facilities in accordance with applicable laws and regulations, including the federal Resource Conservation and Recovery Act (42 U.S.C. §§ 6901-6992) and California's Hazardous Waste Program administered by the Department of Toxic Substances Control.

Construction of Rollins Powerhouse No. 2 may affect water quality; however, construction details are not available at this time. When construction details are available, additional impact analysis may be required. Upgrades to the proposed recreation facilities, may result in minor, temporary affects to water quality. NID is required to consult with the agencies with authority over public trust resources that may be affected by construction, and to obtain all necessary permits and approvals related to the construction prior to any ground disturbing activities. In addition, NID has included in the Proposed Project the requirement to develop in consultation with appropriate agencies and file with FERC construction hazardous materials spill prevention,

control and countermeasure plans for the Rollins Upgrade and recreation facilities work prior to any ground disturbing activity (NID 2011).

As discussed by FERC in FEIS Section 3.3.7, *Land Use and Aesthetic Resources - Environmental Effects for the Yuba-Bear Project*, the potential exists during routine maintenance and construction and operation for accidental spills of hazardous substances within the FERC Project Boundary. NID is responsible for such spills and would be required to identify acceptable prevention measures to avoid such instances. NID proposes to develop Spill Prevention, Control, and Countermeasure plans specific to the proposed Rollins upgrades and new/rehabilitated recreation-related construction.

Therefore, the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

As discussed above under Impact HAZ-1, NID has established a Hazardous Substance Management Plan for the Proposed Project. The Proposed Project includes activities that would use materials that may be hazardous to the environment during routine maintenance activities and operations of the facilities. Minimal storage of these materials would occur. No other actions associated with operation of the hydropower facilities would generate a foreseeable event that would release hazardous materials into the environment, considering the aforementioned hazardous materials laws and safety regulations in place. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No schools are located within one-quarter mile of the FERC Project Boundary. Therefore, the Proposed Project would not emit hazardous emission or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **No impact** would occur and no mitigation is required.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No active cleanup sites listed in the EnviroStor database are located within the FERC Project Boundary (Department of Toxic Substances Control 2025). No solid waste disposal facilities listed by the California Regional Water Quality Control Boards with waste constituents above hazardous waste levels outside the waste management unit are located in or near the FERC Project Boundary. Wastewater Treatment facilities, mining sites, and landfills listed by the California Regional Water Quality Control Boards as having a cleanup or abatement orders are not located within the FERC Project Boundary. There are no active underground storage tanks (USTs) in the FERC Project Boundary (SWRCB 2025). There are three leaking underground storage tank (LUST) cleanup cases located within the FERC Project Boundary that have all

been closed due to completion. The Long Ravine Campgrounds LUST cleanup site, located at the Rollins Reservoir was closed in 2003; the Bowman Lake ATF Spill, located at Bowman Lake, was closed in 2000; and the Clear Creek Copters LUST cleanup site, located at Jackson Meadows Reservoir, was closed in 1999 (SWRCB 2025).

Activities associated within the FERC Project Boundary would not create a significant hazard to the public or environment because there would be no construction or ground-disturbing activities as part of maintenance or operation in proximity to closed or active hazardous materials sites. Therefore, the Proposed Project would not create a significant hazard to the public or the environment. **No impact** would occur and no mitigation is required.

Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

There are no public airports within two miles of the FERC Project Boundary. The Weaver Lake Emergency Helipad is within two miles of the FERC Project Boundary; however, the Proposed Project activities would not interfere with operations of the helipad. Therefore, the Proposed Project would not result in a safety hazard or excessive noise for people residing or working in the FERC Project Boundary. **No impact** would occur and no mitigation is required.

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As discussed in Section 3.20, Transportation, maintenance within the FERC Project Boundary could result in temporary access delays to short-term work areas, but access for emergency purposes would not be obstructed or impeded. Through the maintenance of project roads, the Proposed Project would improve emergency access. Construction plans and specifications would be developed and defined where traffic management is needed during implementation. As a result, the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **No impact** would occur and no mitigation is required.

Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

According to FEIS Section 3.3.7, *Land Use and Aesthetic Resources - Environmental Effects for the Yuba-Bear Project*, the implementation of the Fire Prevention and Response Plan (NID 2013) would improve planning, management, and coordination of wildfire protection and prevention measures. Additionally, the implementation of the plan would lead to a reduction in the occurrence and suppression of wildfires in the FERC Project Boundary, minimizing damage to natural resources and other potential effects. The plan includes certain information, such as key personnel and contact information that may need to be updated on a regular basis.

The FERC Project Boundary is located in State Responsibility Areas ranging from moderate to very high and in Federal Responsibility Areas (CAL FIRE 2023a, 2023b, 2023c). Implementation of the Fire Prevention and Response Plan (NID 2013) would ensure that the Proposed Project would not exacerbate fire risks that already exist in the area. NID would implement measures such as signs for educating the public about fire danger and safety and restrictions on burning

during times of very high and extreme fire danger to help reduce risk to people and structures in the area.

Workers and recreational users within the FERC Project Boundary would be in areas with potentially high fire danger; however, this is not a change from the existing conditions. Additionally, fire risks would be reduced by the implementation of measures in the Fire Prevention and Response Plan (NID 2013). Therefore, the Proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **No impact** would occur and no mitigation is required.

3.13 Hydrology/Water Quality

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
HYDRO-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
HYDRO-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
HYDRO-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv. impede or redirect flood flows?	☐	☐	☐	☒
HYDRO-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
HYDRO-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.13.1 Environmental Setting

The FERC Project Boundary encompasses the watershed of the Middle Yuba River, South Yuba River, and Bear River basins. The Proposed Project's operational activities would be generally consistent with existing operations except for increased minimum instream flows and other environmental measures meant to be protective of resources including water quality and

quantity. Some facilities include recreation areas, new streamflow stations, and road modifications as described in Section 2. Site plans for facility upgrades, new construction, and the Jackson Meadows Sanitary Dump Station decommissioning have not yet been finalized, and those activities are not part of this analysis; those projects will require discretionary approvals and environmental analysis prior to any construction activities.

Beneficial Uses

Beneficial uses and associated water quality objectives for the Proposed Project's waterbodies are listed in the *Water Quality Control Plan* for the Sacramento and San Joaquin River Basins (CVRWQCB 2019). Beneficial uses consist of municipal and domestic water supply; agricultural supply; hydropower generation; water contact and non-contact recreation; cold freshwater habitat; warm freshwater habitat; wildlife habitat; and migration, spawning, reproduction, and/or early development of aquatic organisms. Water quality objectives associated with beneficial uses are listed in Table 3.13-1.

Table 3.13-1. Water Quality Objectives

Parameter	Water Quality Objective
Bacteria	Waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
Biostimulatory Substances	Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses
Chemical Constituents	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. For water designated for use as domestic or municipal supply (MUN), waters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22 of the California Code of Regulations. Additionally, waters shall not contain lead in excess of 0.015 mg/L.
Dissolved Oxygen (DO)	For surface water bodies outside the legal boundaries of the Delta, the monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation. The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time: • Waters designated WARM: 5.0 mg/L • Waters designated COLD: 7.0 mg/L minimum • Waters designated SPWN: 7.0 mg/L minimum
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses
pH	The pH shall not be depressed below 6.5 nor raised above 8.5.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Material	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

Parameter	Water Quality Objective
Tastes and Odors	Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature
Toxicity	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: • Where natural turbidity is less than 1 Nephelometric Turbidity Unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2. • Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU. • Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent. • Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs. • Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses would be fully protected.
Color	Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
Pesticides	• No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. • Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. • Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer. • Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12.). • Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. • Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15. • Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of thiobencarb in excess of 1.0 µg/l.

Source: CVRWQCB 2019

NID's 2008 and 2009 relicensing study generally found that the water quality sampled met Basin Plan Objectives. Where the results were inconsistent with the Basin Plan Objectives, NID found it was not caused by the Proposed Project. The following sections are a summary from NID's FLA (NID 2011) and include only areas of the Proposed Project and parameters that were

inconsistent with the Basin Plan Objectives. All other water quality samples were consistent with Basin Plan Objectives.

Jackson Meadows Reservoir and Jackson Meadows Reservoir Dam Reach (Middle Yuba River): NID identified two parameters that did not meet the Basin Plan Objectives in Jackson Meadows Reservoir, toxicity and DO, and one parameter in Jackson Meadows Reservoir Dam Reach, DO. In spring 2008, NID's Water Quality Study found aluminum concentrations of 0.139 mg/L in the hypolimnion of Jackson Meadows Reservoir, greater than the aquatic benchmark of 0.087 mg/L. For DO, the Basin Plan's DO objective was not met in the hypolimnion of Jackson Meadows Reservoir during 2009. Concentrations near the low level outlet were at or below the DO objective for four of the five months profiles were taken, the exception being June, for which DO levels remained above the 7.0 mg/L benchmark throughout the entire water column.

Sawmill Lake (on Canyon Creek): NID identified one parameter that did not meet the Basin Plan Objective in Sawmill Lake, dissolved oxygen near the bottom of the reservoir; however, downstream, samples collected in Canyon Creek were consistent with all objectives.

Bowman Lake (on Canyon Creek): NID identified one parameter that did not meet the Basin Plan Objective in Bowman Lake, dissolved oxygen near the bottom of the reservoir; however, downstream, samples collected in Canyon Creek were consistent with all objectives.

Bowman-Spaulling Canal below Fuller Dam (Jordan Creek watershed): NID identified one parameter that did not meet the Basin Plan Objective in the Bowman-Spaulling Canal below Fuller Lake Dam, pH. In spring 2008, NID recorded a pH concentration of 6.4 with the Basin Plan Objective for pH being between 6.5 and 8.5.

Chicago Park Powerhouse Reach (Bear River): NID identified one parameter that did not meet the Basin Plan Objective in the Bear River below Chicago Park Powerhouse, pH. In spring 2008, NID recorded a pH concentration of 6.2 with the Basin Plan Objective for pH being between 6.5 and 8.5.

Rollins Reservoir (Bear River): NID identified two parameters that did not meet the Basin Plan Objective in Rollins Reservoir, bacteria and dissolved oxygen. NID found that the geometric mean of total coliform samples collected in Rollins Reservoir near Long Ravine Campground (471 and 1,753 MPN/100mL in 2008 and 2009, respectively), Orchard Springs Campground (309 and 328 MPN/100mL in 2008 and 2009, respectively) and Greenhorn Campground (1,051 and 638 MPN/100mL in 2008 and 2009, respectively) were greater than the benchmark of 240 MPN/100mL. However, only fecal coliform carries a Basin Plan Objective and these counts were well below recommended numeric criteria (200 MPN/100mL) for fecal coliform in both 2008 and 2009 in at these sites. Dissolved oxygen concentrations measured in Rollins Reservoir were often below the Basin Plan Objective of 7 mg/L in the deepest sections of the reservoir profile each month of sampling when the reservoir was stratified which is common in any large reservoir.

Bear River Canal Diversion Dam Reach (Bear River): NID identified two parameters that did not meet the Basin Plan Objective in the Bear River Canal Diversion Dam Reach, turbidity and toxicity. Turbidity in the Bear River downstream of Rollins Dam appears higher than turbidity upstream of the reservoir (20-30 NTU downstream versus about 10 NTU upstream), which could be construed to be an inconsistency with the Basin Plan. The existing condition, if it is considered by the SWRCB to be an inconsistency with the Basin Plan Turbidity objective, is less

than significant, and designated beneficial uses would not be adversely affected for the reasons described below. In fall 2008, Licensees' found aluminum concentrations above the aquatic benchmark of 0.087 mg/L in the Bear River below the Bear River Canal Diversion Dam (0.2 mg/L).

3.13.2 Impact Analysis

Impact HYDRO-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

During routine maintenance of the Proposed Project, waste would be disposed of consistent with all applicable permits and approvals. In addition, if ground disturbance is greater than one acre, a SWPPP would be implemented to prevent sediment from eroding on site and causing sedimentation in nearby watercourses. Operations of the Proposed Project would not substantially affect surface or groundwater quality.

As described above, surface water quality conditions are generally consistent with the Basin Plan objectives throughout the FERC Project Boundary. Where NID did note inconsistencies with the Basin Plan Objectives during relicensing, it was not caused by the Proposed Project. For example, NID does not release any materials that contain aluminum, and is unaware of any other party that releases materials with aluminum to surface waters that drain into Jackson Meadows Reservoir or the Bear River below Rollins. Therefore, the source of aluminum in the reservoir is likely a result of natural conditions (e.g., aluminum minerals in the geology of the watershed). Similarly, dissolved oxygen concentrations that were below the Basin Plan Objective occurred near the bottom of the sampled water body and is expected. Relatively low DO readings at the bottom of oligotrophic reservoirs in the Sierra Nevada is a common occurrence and NID is unaware of any reports of stress to aquatic life in the Proposed Project reservoirs or stream reaches below Proposed Project reservoirs due to low DO.

The Proposed Project would generally operate as they do currently, except for higher minimum instream flows and associated environmental measures. Increased minimum instream flows were developed in collaboration with the resource agencies to be more protective of biological resources and water quality. The continued operation of the Proposed Project would not contribute to discharges of substances that directly affect water quality.

Specific site plans for recreation facility upgrades, new construction, and the decommissioning of Jackson Meadows Sanitary Dump Station have not yet been finalized, and those activities are not part of this analysis. Those projects will require discretionary approvals and environmental analysis prior to any construction activities. Required future approvals and environmental analysis would include assessing potential impacts on water quality and developing appropriate mitigation and/or monitoring requirements at that time.

The Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during maintenance or operations. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact HYDRO-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Flow in a stream reach affects the quality and quantity of habitat to aquatic habitat. NID proposes a monthly minimum streamflow regime for 15 project-affected stream reaches using six water year types (wet, above normal, dry, critically dry, and extreme critically dry) to determine appropriate monthly minimum streamflows. In addition, NID proposes increasing minimum instream flows below numerous dams and diversions to enhance aquatic resources. Minimum instream flow and reservoir minimum pool measures included in NID's Proposed Project were developed to provide adequate protection, and enhancement to affected resources, while protecting NID's water supply reliability. This becomes particularly evident when reviewing NID's Proposed Project measures in Dry and Critically Dry water years. Therefore, under similar hydrologic conditions as those modeled by NID, the Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. As a result, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact HYDRO-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on or off-site?

The Proposed Project would not alter the course of any streams or rivers, and existing drainage patterns would not be substantially altered by routine maintenance or operation of the Proposed Project. Very steep slopes in the Bear River drainage have been assessed but none have been identified as currently adversely affecting the Proposed Project. The amount of deposition in Project reservoirs is low, reservoir shoreline erosion is minimal, and there is not an apparent need for infusion of sediment downstream of Project facilities.

As discussed in Section 3.10, *Geology and Soils*, the Proposed Project could result in erosion and sedimentation caused by ground disturbance during construction activities, mainly associated with recreation facility improvements. As part of the new license, NID would implement an Erosion and Sediment Control Management Plan, that specifies NID and Forest Service BMPs to control site-specific erosion and sedimentation impacts during new construction, reconstruction, and heavy maintenance of facilities, including emergency erosion control measures and protocols to control sedimentation during and after severe storm events. Temporary erosion prevention and control measures would be implemented during construction or reconstruction of facilities and infrastructure. This includes, but is not limited to, reconstruction at dam sites, road reconstruction, and recreation site development where ground disturbance and/or vegetation removal is expected (NID 2011). In addition, if ground disturbance is greater than one acre, a SWPPP would be implemented to prevent sediment from eroding on site and causing sedimentation in nearby watercourses. Therefore, the Proposed Project would result in a **less than significant impact** and would not cause substantial erosion or siltation on or off site. No mitigation is required.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Most of the recreation improvements would occur at or near the existing facilities, which already have some impervious surfaces. It is expected that these improvements would add only minimal, additional impervious surfaces, thereby not significantly altering existing drainage patterns at these facilities. It is unlikely that any additional runoff would lead to any flooding on or off-site. Implementation of the Erosion and Sediment Control Management Plan would apply to construction activities on all lands within the FERC Project Boundary and would be required as part of the Proposed Project, which would avoid and minimize potential erosion and off-site flooding impacts. Therefore, the Proposed Project would result in a **less than significant impact** and would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. No mitigation is required.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As discussed above, the Proposed Project is not expected to generate significant additional runoff. Stormwater within the FERC Project Boundary is not managed through constructed drainage systems but rather infiltrates through the soil or discharges via surface flow to nearby rivers and streams. Additionally, as discussed above, the Proposed Project would not create a substantial amount of new impervious surfaces. Therefore, the Proposed Project would not create substantial additional runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. As such, **no impact** would occur, and no mitigation is required.

iv. Impede or redirect flood flows?

Flood zones are confined mainly to the Proposed Project reservoirs and the Project rivers and drainages. FEIS Section 3.3.2, *Aquatic Resources*, concluded that flow changes that are part of the Proposed Project would not affect compliance with flood control requirements and management in the FERC Project Boundary rivers and drainages. Flood flows in the Proposed Project's waterways would not be altered by operation of the Proposed Project as new minimum instream flows would occur in the existing stream channels and would be less than the controlled spill events in these existing river and stream channels, of which the Proposed Project does not control and is not associated with. Therefore, operation of the new license would not impede or redirect Proposed Project river or drainage flood flows.

Most of the proposed recreation facility improvements would be outside existing identified flood zones. Recreation improvements that may be constructed within an existing flood zone, would be planned to not introduce any structures that would significantly impede or redirect flood flows. Therefore, the Proposed Project would have **no impact** on impeding or redirecting flood flows, and no mitigation would be required.

Impact HYDRO-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

As discussed above, flood zones are limited in the FERC Project Boundary to the Proposed Project reservoirs and the Project rivers and drainages. Parts of the Proposed Project, such as boat launches, picnic areas, or campsites, are in flood zones, and there is a risk of the release of pollutants, such as fuel or oil and grease from vehicles, at existing recreation facilities during a flood. However, as uses at the recreation facilities would not change from existing conditions,

it is not anticipated that the risk of pollutant releases during operations of existing recreation facilities would increase from existing conditions. Any structures planned to be built within an identified flood zone as part of the Proposed Project would not introduce any new pollutants other than motor vehicle and boat deposits, which would be consistent with existing uses and minimal. Along with the goals and objectives of the Proposed Project, the Project reservoirs are also operated in a manner to control flooding. Therefore, the Proposed Project is not anticipated to cause inundation of additional lands and consequently cause a release of pollutants on its own.

The FERC Project Boundary would not be subject to a tsunami, as tsunamis occur along a coastline and the Proposed Project Area is located inland in the Sierra Nevada Mountains and foothills. A seiche typically occurs when an earthquake or landslide directly affects a body of water. As discussed in Section 3.10, Geology and Soils, the Proposed Project Area is not subject to significant seismic or landslide hazards, so seiches that could affect lands adjacent to waterbodies are unlikely. Therefore, the Proposed Project would have a **less than significant impact** related to the release of pollutants during flood, tsunami, or seiche events, and no mitigation is required.

Impact HYDRO-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The continued operation of the Proposed Project was found to be consistent with all comprehensive water quality control plans reviewed by FERC as part of FEIS Section 3.3.2, *Aquatic Resources*. As stated above, the Bay-Delta Plan is still in development so an assessment of whether the Proposed Project would conflict or obstruct implementation of the Bay-Delta Plan cannot be completed at this time since it is speculative. Implementation of the Bay-Delta Plan requires a CEQA evaluation to be completed by the SWRCB, which to date has not been initiated. Once the Bay-Delta Plan is available and specifies requirements for the Yuba and Bear Rivers, NID will review the requirements to determine if operations under the new license are consistent and meet the requirements.

The Proposed Project will require a Section 401 WQC from the SWRCB, the purpose of which is to ensure that the Proposed Project is operated in a manner that is protective of water quality, therefore, the requirements of the Section 401 WQC will be part of the license. Through implementation of the Proposed Project's 401 WQC it is anticipated that any potential conflicts with the pending Bay-Delta Plan would be absolved.

The Sustainable Groundwater Management Act, enacted by the State of California in 2014, seeks to regulate the use of groundwater in California in a manner that is sustainable. Groundwater basins that meet specified conditions are required to prepare Groundwater Sustainability Plans that set forth how the basin will achieve sustainable groundwater use. The Proposed Project is not within a groundwater basin that is subject to the requirements of the Sustainable Groundwater Management Act. In summary, Proposed Project impacts regarding conflict with water quality and groundwater management plans would be **less than significant impact**, and no mitigation is required.

3.14 Land Use/Planning

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
LP-1: Physically divide an established community?	☐	☐	☐	☒
LP-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.14.1 Environmental Setting

The Proposed Project is located in Nevada, Placer, and Sierra counties, California. The existing FERC Project Boundary encompasses 6,252.6 acres of land. The majority of land in the boundary is owned by NID (4,056.3 acres). A portion of the land within the FERC Project Boundary is owned and managed by the Forest Service as part of the Tahoe National Forest (25 percent or 1,540.8 acres) and by BLM as the Sierra Resource Management Area (3 percent or 208.5 acres). The FERC Project Boundary also includes 447.0 acres of privately owned land.

The plans and county ordinances described below direct the land use and management of resources in the vicinity of the Project. As described in more detail below, designated land uses in the vicinity of the Project include general agriculture, residential agriculture, forest, residential forest, forest recreation, public, open space, recreation, resort, and timberland production zones.

Tahoe National Forest Land and Resource Management Plan

The Tahoe National Forest encompasses approximately 800,000 acres within Nevada, Placer, and Sierra counties, portions of which are located within the boundaries of the Proposed Project. The Tahoe National Forest is managed by the Forest Service in accordance with the Tahoe National Forest Land and Resource Management Plan (LRMP), as amended, for old forest ecosystems; aquatic, riparian, and meadow ecosystems; hardwood ecosystems; fire and fuels management; and noxious weed management. The LRMP establishes forest-specific management areas, each of which has standards and guidelines relating to the Forest Service's Recreation Opportunity Spectrum, Visual Quality Objectives (VQOs), timber management practices, and off-highway vehicle (OHV) use. Forest-specific management areas in the vicinity of the Yuba-Bear Project include Henness, Milton-Jackson, Pinoli, Bowman, South Yuba, Grouse, Fuller, and Chalk.

Roads within the Tahoe National Forest are managed in accordance with the 2010 Forest Service Motorized Travel Management EIS and Record of Decision (Forest Service 2010). The plan designates roads, trails, and other areas that are open to motor vehicle use on National Forest lands. The plan also prohibits the use of motor vehicles off designated roads, trails, and other areas, as well as motor vehicle use not consistent with the designations. Roads that are

on Tahoe National Forest lands within the FERC Project Boundary are subject to the provisions of this plan.

Additionally, in accordance with Forest Service regulations, a special use authorization or permit is necessary to occupy, use, or build on NFS land, whether the duration is temporary or long term. (Tahoe National Forest 1990).

BLM Sierra Resource Management Plan

BLM lands within the existing FERC Project Boundary are managed in accordance with the 2007 Sierra Resource Management Plan (BLM 2007). The plan defines the role of BLM in managing and providing open space, safety from wildfire, clean abundant water, economic opportunities, protection and interpretation of the area's rich historical heritage, and diverse, resilient habitats for enjoyment and ecosystem health.

BLM designates Research Natural Areas (RNAs) as a type of Area of Critical Environmental Concern (ACEC) to be maintained for the primary purpose of research and education due to the presence of a resource with relevant or important values. The Sierra Resource Management Plan proposes to designate the Dutch Flat/Indiana Hill RNA ACEC, which is located in Placer County in close proximity to the Project near the Dutch Flat development.

Sierra County General Plan

The Sierra County General Plan's Land Use & Open Space Element was adopted in 2012 and serves to protect Sierra County's existing rural qualities and address land use concerns as the County grows (Sierra County 2012). The plan designates 12 land uses within the County, two of which are located within the FERC Project Boundary (open space and forest land uses).

Nevada County General Plan

Nevada County manages private land uses in accordance with the 1996 Nevada County General Plan, as last amended in 2014 (Nevada County 2014). The plan serves as a long-term development planning guide for Nevada County. Of the 31 land use types designated in the plan, six land use types are identified within the FERC Project Boundary: estate, forest, open space, rural, and water (Nevada County 2024).

Placer County General Plan

The 2013 Placer County General Plan guides the County's long-term land use and development and addresses land use, circulation (transportation), housing, conservation, open space, noise, and safety. The Placer County General Plan consists of two types of documents: the Countywide General Plan (which consists of a policy document and land use diagram) and a set of 17 more detailed community plans (including one "area" plan) covering specific areas of the unincorporated county. The Project is located within the Colfax Community Plan area. The plan designates 15 land use categories, seven of which are within the FERC Project Boundary: agriculture/timberland, park, ranchette, rural estate, rural residential, special study corridor, and water influence. (Placer County 2013, City of Colfax 1990).

Shoreline Management

Currently, there is no private development along any of the Project reservoirs. NID does not have formal, written shoreline management policies for uses and facilities on lands adjacent to the project reservoirs. Lands along the reservoir shorelines are managed in accordance with the applicable county general plan and zoning ordinances. Federal- and state-owned lands along the reservoir shorelines are managed in accordance with the applicable federal or state land management plan. Shoreline development may be allowed when it is consistent with project operational requirements, public safety, the Project's recreation plan, and other resource management plans, and is compliant with all federal, state, and local regulations.

3.14.2 Impact Analysis

Impact LP-1: Physically divide an established community?

Within the FERC Project Boundary, none of the Proposed Project facilities, boundary modifications, or routine maintenance and ongoing operational activities would be located in or affect established communities.

The Proposed Project would include construction of a new powerhouse associated with the Rollins Development (Rollins No. 2 Powerhouse). Construction details are not available for the Rollins Powerhouse No. 2 at this time of analysis; however, the new powerhouse would be constructed entirely on NID-owned land adjacent to the existing powerhouse location in a laydown area just below the existing parking lot on the right bank of the river and would not divide an established community.

In total, NID's proposed modifications to the FERC Project Boundary would decrease the area within the existing FERC Project Boundary by approximately 170 acres. Areas proposed to be removed from the existing FERC Project Boundary include the mineral survey area south of the Dutch Flat afterbay, and the administrative site at Jackson Meadows reservoir and the recreation road that provides access to it. Modifications to the existing FERC Project Boundary would also include the addition of areas for certain primary project roads and proposed recreation facilities (Bowman Lake currently on Forest Service land and Sawmill Lake currently on NID owned land). None of these modifications would be located in or near established communities. As discussed in Table 5.10 of the FEIS, implementation of the Transportation Plan, filed August 29, 2012, to improve road management would ensure public access to lands within the FERC Project Boundary.

Operations and maintenance that are part of the Proposed Project would generally be consistent with existing operations. NID would operate the Proposed Project in the same manner as it operates the Project currently, with a few changes attributable to proposed environmental measures. Changes in future operations would be related to the re-operation between PG&E's Dutch Flat No. 1 and NID's Dutch Flat No. 2 powerhouses based on water rights rather than operational or efficiency considerations and the inclusion of modified winter/spring operations implemented since 1997. These proposed modifications would not affect established communities.

Therefore, the Proposed Project would not physically divide any established communities. As a result, **no impact** would occur, and no mitigation is required.

Impact LP-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Proposed Project would not result in changes to existing land uses. Within the FERC Project Boundary, the proposed facilities, boundary modifications, and operation and maintenance modifications would be consistent with goals and policies outlined in the Sierra, Nevada and Placer County General Plans, the Colfax Community Plan, and the Tahoe National Forest LRMP and the BLM Sierra Resource Management Plan.

Therefore, the Proposed Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. **No impact** would occur, and no mitigation is required.

3.15 Mineral Resources

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
MR-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
MR-2: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.15.1 Environmental Setting

Mineral resources play a prominent role, both today and dating back to the 1849 gold rush, in Placer, Sierra, and Nevada counties. A wide variety of mineral resources are produced within these counties, including, but not limited to, aggregate products like sand and gravel, stone, and gold (Placer County 1994, Bartholomew & Assoc. 1991). Mineral Resource Zones (MRZs) have been established for Nevada and Placer counties, pursuant to the Surface Mining and Reclamation Act, but such mapping has not been accomplished within Sierra County (Sierra County 2012).

There are no mineral resource recovery sites that would be impacted by the Proposed Project. Active mines within Sierra County are not located within the FERC Project Boundary (Sierra County 2012).

3.15.2 Impact Analysis

Impact MR-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

The Proposed Project would not change land uses, result in significant extensions of infrastructure or footprint, or in any way change access to mineral resources within the FERC Project Boundary. Mineral resources are abundant within the tri-county area; however, due to limited new construction, ground disturbance, and a lack of change in land uses, the Proposed Project would not limit access to any such resource beyond current conditions. As such, the Proposed Project would not result in any loss of availability to a known mineral resource. Therefore, the Proposed Project would have **no impact**, and no mitigation is required.

Impact MR-2: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

As discussed in Section 3.14, Land Use and Planning, the Proposed Project would not result in changes to existing land uses. The Proposed Project would not result in significant extensions of infrastructure or footprint, or in any way change access to mineral resources within the FERC

Project Boundary. As such, it would not result in any loss of availability to a known mineral resource recovery site. Therefore, the Proposed Project would have **no impact**, and no mitigation is required.

3.16 Noise

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
NOISE-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
NOISE-2: Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
NOISE-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

3.16.1 Environmental Setting

Noise is commonly defined as an unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Noise is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale adjusts the sound power levels to be consistent with human hearing response. Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. In general, noise-sensitive land uses (“sensitive receptors”) are any residence, hospital, school, hotel, library, office, or similar facility where quiet is an important attribute of the environment.

The Proposed Project is located in a region containing both foothill rural communities and forested wilderness. Existing ambient noise levels in the area are relatively low. Existing sources of noise from the Proposed Project include environmental factors (wind and water), existing electrical and hydroelectric facilities, transportation sources, and recreational activities. Noise levels are noticeably higher closer to transportation facilities and recreation areas. Sensitive receptors in the vicinity of the Proposed Project facilities include recreationists and residents.

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Decibel notation (VdB) is commonly used to measure vibration. The VdB compresses the range of numbers required to describe vibration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a typical environmental problem.

However, in contrast to noise, groundborne vibration is not a phenomenon that most people experience daily and is typically attributed to construction activities.

3.16.2 Impact Analysis

Impact NOISE-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

There would be no changes to the operation of the Proposed Project that would be expected to alter the noise levels associated with the existing hydropower facilities. Likewise, there would be no substantial change in ambient noise levels at recreation facilities during operations.

The Proposed Project would generate temporary noise from short-term construction activities associated with the recreation upgrades, routine maintenance activities and transport of maintenance equipment to recreation and hydropower facilities. For noise sources such as maintenance activity and vehicle traffic, the region of influence is typically less than 0.5 miles from the noise source. Noise coming from maintenance work, although temporary, can potentially affect nearby sensitive receptors, such as residences. Routine maintenance of the Proposed Project would require using equipment that would be audible at off-site locations. Received noise levels would fluctuate depending on the maintenance activity, equipment type, and distance between noise source and receiver. Additionally, noise from equipment would vary depending on the number and type of equipment at a location at any given time.

Table 3.16-1 lists maximum noise levels recommended for noise impact assessments for typical equipment based on a distance of 50 feet between the equipment and a noise receptor. Equipment shown in Table 3.16-1 represents a broad overview of equipment and associated noise levels. Not all of the equipment listed in Table 3.16-1 would be used for construction or maintenance activities of the Proposed Project. For most construction or maintenance activities associated with the Proposed Project, equipment use would be limited to trucks and hand tools, but other equipment, such as graders and generators, may also be used at some locations and, therefore, are included in Table 3.16-1. All construction and maintenance activities would be conducted during day time hours and would not require night time noise-generation.

Table 3.16-1. Noise Levels of Typical Construction Equipment

Equipment Type	Range of Maximum Sound Levels for Analysis (dBA at 50 feet)	Maximum Sound Levels for Analysis (dBA at 50 feet)
Rock drill	83–99	96
Jackhammer	75–85	82
Pneumatic tool	78–88	85
Pump	74–84	80
Haul truck	83–94	88
Portable generator	71–87	80
Tractor	77–82	80
Front-end loader	77–90	86
Hydraulic backhoe	81–90	86

Equipment Type	Range of Maximum Sound Levels for Analysis (dBA at 50 feet)	Maximum Sound Levels for Analysis (dBA at 50 feet)
Hydraulic excavator	81–90	86
Grader	79–89	86
Air compressor	76–89	86
Trucks	81–87	86

Source: Bolt et al. (1987)

Notes: dBA = A-weighted decibel, ft = foot, lbs = pounds

Sensitive receptors in the vicinity of the Proposed Project could include residences, businesses, and campgrounds. Construction of the recreation upgrades, and maintenance and operations of the Proposed Project would take place in remote areas and would not take place within 50 feet of any sensitive receptors. Recreational areas would experience increases in noise during construction and routine maintenance activities, but it would be temporary and limited to daytime hours.

Therefore, the Proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Proposed Project in excess of standards established in the local general plans or noise ordinances, or applicable standards of other agencies. As such, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact NOISE-2: Generation of excessive groundborne vibration or groundborne noise levels?

The region of interest for noise and vibration issues is typically localized. Groundborne vibrations generally attenuate rapidly with increasing distance from the vibration source. The distances involved depend primarily on the intensity of the vibrations generated by the source, and partly on soil and geologic conditions. Detectable vibrations will travel the greatest distance through solid rock and the least distance through loose, unconsolidated soils or saturated soils. For vibration sources such as maintenance activity and vehicle traffic, the region of influence is typically less than 1,000 feet from the vibration source.

Construction and maintenance activities associated with the Proposed Project would be localized, short-term, and would not generate excessive groundborne noise or vibration levels. Given the remote nature of the FERC Project Boundary, any construction and maintenance activities that generate temporary vibration are not anticipated to be near potential sensitive receptors.

When construction or maintenance activities are being performed at the recreation areas, these areas would be closed temporarily, and visitors would be directed to other recreation areas. Therefore, visitors would not be disturbed or subjected to excessive groundborne noise or vibration levels. Therefore, there would be no generation of excessive groundborne vibration or groundborne noise levels during construction, operations and maintenance of the Proposed Project. As a result, **no impact** would occur, and no mitigation is required.

Impact NOISE-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No airports are located within two miles of the Proposed Project. The nearest airport would be the Blue Canyon – Nyack Airport, located approximately 5 miles from the nearest work area. The Proposed Project does not include any new residential uses. Recreation sites and hydropower facilities associated with the Proposed Project currently exist, so the Proposed Project would not expose recreationists or workers to new sources of noise. Therefore, the Proposed Project would not expose people residing or working in the FERC Project Boundary to excessive noise levels resulting from aircraft noise. As a result, impacts would be **less than significant**, and no mitigation is required.

3.17 Population/Housing

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
PH-1: Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
PH-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.17.1 Environmental Setting

The Proposed Project is located in Nevada, Placer, and Sierra counties, California, and includes existing facilities on the Middle Yuba River and Bear River in NID's Proposed Project, FERC Project No. 2266. The FERC Project Boundary includes lands owned and managed by the Forest Service as part of the Tahoe National Forest (25 percent or 1,540.8 acres), by BLM as the Sierra Resource Management Area (3 percent or 208.5 acres), and 447.0 acres of privately owned land. All other lands within the boundary are owned by NID (4,056.3 acres).

The areas surrounding the Proposed Project can be generally classified as rural and sparsely populated. Much of the land surrounding the FERC Project Boundary is owned and managed by the Forest Service and BLM, with no considerable population centers. Populated areas in the Project vicinity are primarily located near Rollins Reservoir in Placer and Nevada Counties. Grass Valley is the largest city in the Project vicinity, located approximately 6 miles northwest of Rollins Reservoir, with a population of 14,126 (U.S. Census Bureau 2023a). Nevada City, located approximately 7 miles from Rollins Reservoir, has a population of 3,224 (U.S. Census Bureau 2023b). Colfax is the closest city to the Project, located approximately 2 miles southeast of Rollins Reservoir, with a population of 2,095 (U.S. Census Bureau 2023b). Chicago Park, an unincorporated community, is located less than 1 mile west of Rollins Reservoir, with a population of 1,007 (U.S. Census Bureau 2023d).

Other populated areas in the Project vicinity include the census-designated places (CDPs) of Alta, located less than 2 miles away from the Dutch Flat Development, and Sierra City, located approximately 4 miles away from the Bowman Development Milton Diversion Dam. Both of these CDPs have a population of less than 1,000.

3.17.2 Impact Analysis

Impact PH-1: Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

The Proposed Project would not encourage population growth in or near the Proposed FERC Project Boundary, as no new residential facilities are proposed or reasonably foreseeable as a result of the Proposed Project. As discussed in Section 3.14, *Land Use/Planning*, the Proposed Project would not result in any changes to existing land uses and would not convert any non-residential lands to residential lands. The Proposed Project would continue the operation and maintenance of NID's existing hydropower facilities and would not result in other infrastructure that would induce population growth.

The purpose of the Proposed Project is to continue to provide a source of hydroelectric power and serve as a water supply for both domestic and irrigation purposes for NID. In addition to allowing NID to generate electricity for the term of the new license, issuance of a license would also facilitate the Proposed Project in meeting downstream consumptive water demands of both NID and PCWA. Minimum instream flow and reservoir minimum pool measures included in NID's Proposed Project were developed to provide adequate protection, mitigation and enhancement to affected resources, while protecting NID's water supply reliability consistent with the projected service needs. NID approved an Urban Water Management Plan (NID 2020) which includes NID's existing water supplies, projected supplies, and the strategy for meeting future water demands based on California Department of Finance population projections. The Proposed Project is consistent with projected water demands identified for this plan in the NID service area. Therefore, the Proposed Project would not indirectly induce the construction of new infrastructure.

Although the Proposed Project would include the development of new roads and improvement of existing roads within existing recreation sites, it would not include the extension of main public roads that would contribute to population growth. Therefore, the Proposed Project would not induce substantial unplanned population growth in the area either directly or indirectly. As a result, **no impact** would occur, and no mitigation is required.

Impact PH-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The Proposed Project facilities, FERC Project Boundary modifications, and changes to existing operations would not displace any people or housing as the majority of the Proposed Project would occur on uninhabited lands owned by NID and on lands owned and managed by Forest Service as part of the Tahoe National Forest and the BLM as part of the Sierra Resource Management Area. Therefore, the Proposed Project would not displace people or housing or require the construction of replacement housing. As a result, **no impact** would occur, and no mitigation is required.

3.18 Public Services

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire Protection?	☐	☐	☒	☐
ii. Police Protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

3.18.1 Environmental Setting

The Forest Service provides fire suppression and prevention activities on Tahoe National Forest lands within the FERC Project Boundary. Similarly, the BLM provides fire prevention, suppression, and mitigation efforts on the lands it manages under the Sierra Resource Management Plan. CAL FIRE is responsible for wildlife fire protection and suppression on lands in the Project vicinity under their jurisdictions in Nevada, Placer, and Sierra counties. Several fire stations are located within five miles of the Project vicinity, including CAL FIRE stations in Dutch Flat, Colfax, Alta, and Grass Valley.

The Nevada, Placer, and Sierra County Sheriff's Departments provide police protection for their respective counties. NID provides law enforcement funding to Nevada, Placer, and Sierra counties through public land use fees. The California Highway Patrol also provides law enforcement on unincorporated public roads in the vicinity of the Project. Forest Service law enforcement personnel from the Tahoe National Forest and BLM personnel are responsible for enforcing regulations related to the management of Forest Service and BLM lands and resources. The main Sheriff's station for the Nevada County Sheriff's Department is located in Nevada City, while the Placer County Sheriff's Department has its main station in Colfax. The main station for Sierra County Sheriff's Department is located in Downieville.

There are no schools located within the FERC Project Boundary. The closest school to the FERC Project Boundary is Chicago Park Elementary which is located in the Chicago Park community approximately 1 mile west of Rollins Reservoir.

No parks are located within the FERC Project Boundary. Auburn State Recreation Area is the closest park or recreational area from the Proposed Project and is located approximately 2 miles southwest of Rollins Reservoir.

3.18.2 Impact Analysis

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i. Fire Protection?

During construction activities associated with the Proposed Project, there would be minor road closures; however, construction plans would include implementation of a traffic management plan which would avoid or minimize impacts to emergency access during construction. With implementation of a traffic management plan, the Proposed Project is not expected to increase travel times, congestion, or road use for fire protection services during construction. Additionally, the Proposed Project would include the construction of new recreation access roads and improvements to existing roads. Improvements to road conditions within the FERC Project Boundary may make emergency access more effective and efficient. Through the improved maintenance of roads under the Proposed Project, emergency access for fire protection services would ultimately improve.

As discussed in FEIS Section 3.3.5, *Recreation Resources – Environmental Effects for the Yuba-Bear Project*, recreational use under the Proposed Project is expected to increase by 23 percent over the next 30 years. The projected increase in the number of recreational visitors over the term of the Proposed Project would likely increase the need for fire protection services. As discussed in FEIS Section 5.5.4, *Summary of 10(j) and Recommendations and 4(e) Conditions for the Yuba-Bear Project*, the Proposed Project would include 4(e) conditions that would require the Forest Service and BLM to adopt and implement a Fire Prevention and Response Plan Emergency that establishes emergency procedures and protocols (BLM Condition #40, Condition Forest Service Condition #62) for their respective federal lands. These emergency procedures would generally include fire prevention and protection actions, practice of fire safety at recreation facilities, procedures in the reporting of wildland fires, and implementation of protocols for fire control and extinguishing fires. With implementation of Forest Service and BLM 4(e) conditions to implement a Fire Protection and Response Plan, the Proposed Project would have a **less than significant impact** on BLM and Forest Service fire protection services, and no mitigation is required.

ii. Police Protection?

Impacts to police protection services under the Proposed Project would be similar to those described for fire protection services above. According to FEIS Section 3.3.5, *Recreation Resources – Environmental Effects of the Recreation Plan for the Yuba-Bear Project*, Forest Service condition #57 to implement a recreation plan in Forest Service that would address fire protection services for recreation areas. BLM condition #34 would require NID to enter into a recreation O&M agreement BLM to provide \$30,000 annually for operation, maintenance, law enforcement patrolling, and administration.

In FEIS Section 3.3.5, *Recreation Resources – Environmental Effects of the Recreation Plan for the Yuba-Bear Project*, the Forest Service specifies in condition 57 that NID coordinate, within 1 year of license issuance, with the Forest Service to develop a plan to address the management of project-related recreation on NFS lands. The plan would address, among other items, (1) patrolling or providing for patrols through fire season by personnel that have the ability to extinguish abandoned and escaped campfires, and perform fire prevention duties; (2) providing for patrols, through the recreation season (including the peak season and the shoulder season); and (3) patrolling dispersed public use areas within one-quarter mile of all project reservoirs and project-affected waterways.

BLM Condition 34 specifies that, beginning 90 days after license issuance, NID enter into a recreation O&M agreement to provide \$30,000 annually to BLM for operation, maintenance, law enforcement patrolling, and administration in accordance with the Recreation Plan.

In addition, Placer County recommends that NID contribute to the costs of increased county services and infrastructure, including public safety and roads, resulting from the Proposed Project. Placer County notes that NID and the County are trying to reach an agreement; however, if this agreement is not reached, NID should be required by the new license to compensate Placer County for the costs of any increased county services that have a nexus to the Proposed Project.

Through implementation of the aforementioned agreements and Forest Service and BLM 4(e) conditions, the Proposed Project would have a **less than significant impact** on police protection services, and no mitigation is required.

iii. Schools?

There are no schools located within the FERC Project Boundary. The Proposed Project would not generate an increase in population that would affect schools and demand on schools and school facilities would remain unchanged. Therefore, the Proposed Project would have **no impact** on or associated with schools, and no mitigation is required.

iv. Parks?

The Proposed Project would not generate an increase in population that would affect parks. Therefore, the Proposed Project would have **no impact** on or associated with parks, and no mitigation is required.

v. Other Public Facilities?

The Proposed Project would not generate an increase in population that would affect any other public facilities. Therefore, the Proposed Project would have **no impact** on or associated with other public facilities, and no mitigation is required.

3.19 Recreation

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
REC-1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
REC-2: Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☒	☐	☐

3.19.1 Environmental Setting

The Proposed Project's recreation facilities and opportunities are found in four basins – the Middle Yuba River Basin, South Yuba River Basin; Canyon Creek Basin; and the Bear River Basin. Most of the Proposed Project's recreation facilities and overall use occur at two Project reservoirs – Jackson Meadows and Rollins reservoir while other Project reservoirs generally provide less developed and primitive recreation facilities.

The Proposed Project would involve routine maintenance and ongoing operations of recreation facilities in the FERC Project Boundary. The new license for the Proposed Project also includes provisions for future upgrades and construction work at recreation facilities. See Section 2.3.1, *Proposed Facilities*, for the locations of proposed recreational facilities construction.

3.19.2 Impact Analysis

As part of its Application for New License, NID would continue to maintain and operate recreation facilities on the Proposed Project. Specifically, NID included the requirement in the new license for the Proposed Project to implement the *Recreation Facilities Plan*, in which NID would maintain, rehabilitate and upgrade the existing Proposed Project recreation facilities over the course of the new license term. The primary goal of the *Recreation Facilities Plan* is to guide public recreation use of the Proposed Project's recreation facilities over the term of the license, while minimizing recreation use impacts to natural, historic, and prehistoric resource within the FERC Project Boundary. The Plan includes the following three objectives to help achieve this goal:

1. To provide a description and plan for recreation facilities that meet the needs of Proposed Project recreation users and are designed to meet federal, state, and local legal requirements.
2. To describe in detail NID's responsibilities regarding recreation facilities under the new license.

3. To describe the monitoring plan over the term of the new license to help ensure Proposed Project recreation users achieve high quality recreation experiences and that recreation use impacts are minimized and remain within acceptable limits.

Impact REC-1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The Proposed Project would mainly involve routine maintenance and ongoing operations of recreational facilities as well as, future construction at recreational facilities for various upgrades. NID would rehabilitate the individual facilities and components at each Proposed Project recreation facility as needed based as the facilities near the end of their useful life. The major rehabilitation schedule in the Proposed Project's *Recreation Facilities Plan* is phased such that similar facility types (i.e., campgrounds, picnic areas, boat launches) are not scheduled for major rehabilitation during the same year/time period. Thus, temporarily displaced visitors during major rehabilitation closures would have alternative camping, boating, or picnicking facility options within the FERC Project Boundary for the few months or season during the major rehabilitation work. This impact would be short-term and temporary. Further, at the larger facilities (particularly campgrounds), NID would be able to phase the construction within the larger facility to provide some reduced camping capacity during the major rehabilitation. Given the phased rehabilitation schedule and the short-term, temporary impact, the Proposed Project would not accelerate the physical deterioration of the existing facilities. Further, no neighborhood or regional parks would be affected by the Proposed Project.

The Proposed Project's developed boat ramp facilities at Jackson Meadows Reservoir (2 launches) and Rollins Reservoir (4 launches) are dependent upon the reservoir water surface elevation to remain accessible or usable by the public. As a result, the operation of the Proposed Project has the potential to increase the use of other Proposed Project or regional boat ramp facilities such that substantial physical deterioration of the facility would occur or be accelerated, primarily if the operation resulted in none of the boat ramps being usable. Under the Proposed Project, there would be little to no change in usable periods at the four Rollins Reservoir boat ramps. At Jackson Meadows, the usable period at Pass Creek boat ramp is shortened slightly (approximately 2 weeks) during Dry water years (i.e., usable through Labor Day rather than September 15) and is shortened in Critically Dry water years by one to two weeks (i.e., usable through mid- to late June rather than July 1). Similarly, under the Proposed Project, the usable period at Woodcamp boat ramp is shortened by nearly two weeks during Dry water years (i.e., usable through July 1 rather than July 15). However, when Woodcamp boat ramp is not usable, the other boat ramp at Jackson Meadows Reservoir (Pass Creek boat ramp) provides visitors with a usable boat ramp throughout the peak recreation season (Memorial Day through Labor Day) with the exception of Critically Dry water years. Thus, the change in usable time periods is not substantial and would not accelerate the physical deterioration of the existing facilities or other regional boat ramp facilities.

Overall, the Proposed Project would not accelerate physical deterioration of existing facilities and would have a **less than significant impact**. As a result, no mitigation is required.

Impact REC-2: Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The Proposed Project includes limited construction activities for recreation upgrades, operational maintenance¹, minor rehabilitation², minor improvements,³ and ongoing operations of existing recreational facilities. Construction, maintenance and operational activities at recreational facilities have the potential to affect environmental resources, which is discussed throughout the Draft IS/MND. Proposed Project impacts to biological resources, geology and soil resources, and tribal cultural resources in the FERC Project Boundary would require mitigation measures to offset impacts, which are discussed in Section 3.4, *Biological Resources*, in Section 3.7, *Geology and Soils*, and Section 3.21, *Tribal Cultural Resources*.

As discussed in FEIS Section 3.3.5, *Recreation Resources – Environmental Effects for the Yuba-Bear Project*, recreational use under the Proposed Project is expected to increase by 23 percent over the next 30 years. The projected increase in the number of recreational visitors over the term of the Proposed Project is planned for and addressed within the *Recreation Facilities Plan*.

In addition, the Proposed Project's *Recreation Facilities Plan* includes major rehabilitation⁴ and/or capital improvements⁵ of existing facilities. For each future major capital improvement project, the *Recreation Facilities Plan* requires a Site Development Planning process -- a three-step planning and implementation including preparation of a Design Narrative, Site Concept Plan, Site Development Plan, Construction Plan, contracting, and reconstruction. Notably, the goal of the Site Development Plan step in this planning process is to 1) develop design drawings for the recreational features described in this Plan; 2) identify site- specific erosion and sedimentation control measures that will be used; 3) identify any necessary measures to address traffic circulation and parking issues associated with recreation use during the reconstruction activity; and 4) develop an implementation schedule. Further, this step would involve: 1) review of the other sensitive resource inventories (cultural, archeological, and

¹ Operational maintenance is defined as keeping fixed assets in acceptable condition, including repairs, painting, replacement of minor parts and minor structural components, which neither materially adds to the value of the property nor appreciably prolongs its life.

² Minor rehabilitation is defined as repairs, and replacement of parts that result in fewer breakdowns and fewer premature replacements and help achieve the expected life of the fixed asset; does not include construction of new facilities or the replacement of an existing fixed asset; and will arrest deterioration and appreciably prolong the life of a property.

³ Minor improvement is defined as construction, installation, or assembly of a new fixed asset; do not require submittal of design drawings or construction plans or alter the footprint or layout of an existing site. Examples include installation of directional signs, information boards, interpretive displays, and vehicle barriers.

⁴ Major rehabilitation is defined as reconditioning or replacing an existing fixed asset or any of its components to restore the functionality or life of the asset, which typically occurs when the asset nears or has exceeded its useful life (e.g., construction of expanded or new campgrounds, picnic areas, parking areas; replacing boat ramps; construction of trails).

⁵ Major capital improvement is defined as a significant alteration, expansion, or extension of an existing fixed asset to accommodate a change of purpose often requiring a new footprint.

biological resources); 2) identification of appropriate procedures to avoid impacts to other key resources at the site; and 3) identification of any regulatory requirements needed prior to commencing construction. This planning process inherently reduces potential impacts to the physical environment.

Future new major capital improvement projects include when an entirely new recreation facility would be constructed or the construction of a major new site feature (e.g., new parking area, replacing a boat ramp, expanded camping loop, new connector trail). These new facilities or site features would be defined through future planning including site feasibility, site survey, and detailed design. Site and construction plans for future undefined work associated with the Proposed Project may require additional discretionary approvals and environmental analysis prior to any construction activities.

Therefore, after biological resources, paleontological resources, and tribal cultural resources mitigation measures have been implemented, along with implementation of the measures and planning processes in the *Recreation Facilities Plan*, impacts from the Proposed Project on the physical environment would be **less than significant with mitigation incorporated**.

Mitigation Measures: see mitigation for Biological Resources (Section 3.4), Paleontological Resources (Section 3.7), and Tribal Cultural Resources (Section 3.21).

3.20 Transportation

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
TRANSP0-1: Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
TRANSP0-2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
TRANSP0-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
TRANSP0-4: Result in inadequate emergency access?	☐	☐	☐	☒

3.20.1 Environmental Setting

The Proposed Project is located in remote areas of Nevada, Placer, and Sierra counties. Proposed Project reservoirs and facilities within the FERC Project Boundary are accessed using small, remote roadways. The majority of these remote roadways are paved and unpaved, two-lane roads that lack bicycle or pedestrian facilities. No new roads would be built as part of the Proposed Project. The Proposed Project includes recreational areas that would be accessed by recreationists on public roads. Roads that are part of the Proposed Project would be maintained by NID for the life of the licenses. See [Section 2.3.1](#) of this document to view Proposed Project roadway modifications.

In Section 3.3.7.2 of the FEIS, NID's proposed changes to the FERC Project Boundary would decrease the area within the FERC Project Boundary by about 170 acres. The Proposed Project would continue to encompass lands owned by the U.S. and managed by the Forest Service and BLM. The areas proposed to be removed from the FERC Project Boundary, which include the mineral survey area south of the Dutch Flat afterbay, and the administrative site at Jackson Meadows reservoir and the recreation road that provides access to it, are not necessary for continued project operations. The FERC Project Boundary would encompass all facilities and features necessary for the operation of the project, including all primary project roads and existing, new, and/or rehabilitated recreation areas and recreation access roads.

3.20.2 Impact Analysis

As discussed in Section 3.3.7.2 of the FEIS, NID filed a Transportation Management Plan on April 12, 2011, and a revised Transportation Management Plan on June 18, 2012, and August 29, 2012. NID proposes to implement the Transportation Management Plan upon Commission approval. The plan describes the scope of road improvements needed for road design,

construction, and maintenance including road planning, road rehabilitation, and road operation and maintenance for the primary project roads identified in the FERC Project Boundary. Additionally, NID proposes to treat certain identified recreation roads with the same level of maintenance provided to primary project roads. Generally, recreation roads include recreation access roads, primary campground circulation loops, and parking areas. The plan includes an implementation schedule and discusses ongoing monitoring.

Impact TRANSP0-1: Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Existing roadways in the FERC Project Boundary are mostly rural roadways with no bicycle or pedestrian facilities. NID's Transportation Management Plan would bring project roadways into compliance with public land agency standards and rehabilitate roadways in poor condition. These standards are outlined in [Section 2.3.1](#) of this document.

There would be a temporary increase in use of the rural roadways during short-term construction and routine maintenance activities within the FERC Project Boundary. Long-term operations within the FERC Project Boundary would not result in an increase in the number of vehicles using the rural roadways. This is because O&M activities within the FERC Project Boundary are not anticipated to increase the public service capacity of these facilities. Therefore, the Proposed Project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. As such, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact TRANSP0-2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Section 15064.3 of the CEQA Guidelines states the following:

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

For the major components of the Proposed Project, such as, Rollins Powerhouse No. 2, construction details are not available at this time of analysis. When construction details are available, additional impact analysis may be required to define vehicle miles traveled (VMT) for that component of the Proposed Project. During construction of the recreation upgrades, there would be a short-term increase in VMT due to construction worker, vendor, and haul trips.

Operation of the Proposed Project would not cause a long-term increase in the amount of vehicle miles traveled. Overall implementation of the Proposed Project would cause a minor, short-term increase in the amount of vehicle miles traveled attributable to routine maintenance activities. The increase in vehicle miles traveled as a result of operations of the Proposed Project would be small, considering the types of maintenance activities (e.g., small number of vehicles or construction operators, minimal number of structures needing materials transported to the site). At each Project site, routine maintenance is anticipated to result in anywhere from 5-10 trips per month, and long-term O&M would not result in fewer trips per month. Given the type of “development project” and the minimal amount of VMT expected, the Proposed Project would not meet the screening threshold for VMT analysis for small projects according to the Governor’s Office of Planning and Research Technical Advisory Memo (OPR 2018). Therefore, the Proposed Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), which sets the criteria for assessing transportation impacts. As such, the Proposed Project would have a **less than significant impact**, and no mitigation is required.

Impact TRANSPO-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Proposed Project would not change the surrounding transportation system’s geometric design features or require new incompatible uses. The temporary maintenance work associated with the Proposed Project would be accessed using existing rural roadways. Therefore, the Proposed Project would not substantially increase public hazards due to a change in a geometric design feature or incompatible uses. As a result, **no impact** would occur, and no mitigation is required.

Impact TRANSPO-4: Result in inadequate emergency access?

During construction activities, there would be minor road closures; however, long-term operations and temporary construction of the Proposed Project would not change access routes to or within the FERC Project Boundary or result in inadequate emergency access. Implementation of the Transportation Management Plan would also further minimize potential impacts during routine maintenance, long-term operations, and temporary construction. Through the routine maintenance of project roads, the Proposed Project would be expected to improve and maintain emergency access. As a result, **no impact** would occur, and no mitigation is required.

3.21 Tribal Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	☐	☒	☐	☐
TCR-2: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

3.21.1 Environmental Setting

The Proposed Project falls within the traditional territory of the Washoe and Nisenan or Southern Maidu peoples of California and Nevada. This section provides a brief ethnographic and ethnohistoric background for the Nisenan and Washoe, as well as the regulatory context and consultation efforts related to TCRs for the Proposed Project.

The following descriptions of Nisenan/Southern Maidu and Washoe are excerpted from the Historic Properties Management Plan (HPMP) prepared for the Yuba-Bear Hydroelectric Project (NID 2012: Appendix E).

Nisenan/Southern Maidu

The majority of the Proposed Project falls on lands attributed ethnographically to the Nisenan people, also referred to as the Southern Maidu (Beals 1933, Kroeber 1976, Wilson and Towne 1978). The Nisenan are speakers of a language closely related to Maidu and Konkow and all are members of the Penutian language family. Penutian languages are estimated to have been spoken by half of California's native population at the time of historic contact (Moratto 1984:538-539). Beals (1933) identified four principal linguistic divisions within Nisenan but observed that "every political unit showed slight dialectic differences (Beals 1933:338)." Beals differentiates between valley, hill, and mountain Nisenan dialects and further identifies divisions running east-west that approximate the course of major streams, including one in the vicinity of the Bear River. Shipley (1978:83) identified seven Nisenan dialects, classified as Valley Nisenan, Oregon House, Auburn, Clipper Gap, Nevada City, Colfax, and Placerville.

Nisenan society was organized into small politically independent tribes or tribelets (Kroeber 1976; Wilson and Towne 1978). Each political unit consisted of one or more villages and a number of smaller hamlets with populations ranging from about 20 to about 100 people (Kroeber 1976:831). Nisenan villages were often occupied by some inhabitants year round. Permanent village occupants typically included the infirm or aged members unable to make treks to the higher mountains. Nisenan economy depended extensively on the acorn that was gathered in the fall and stored for later use. However, the Nisenan also hunted and gathered year-round, utilizing the diverse biotic communities of the western slope of the Sierra Nevada (Hull 2007:180). Hunting was done both individually and communally. Communal hunting was accomplished through a variety of methods, including drives and set fires. Deer, antelope, elk, black bear, wildcats, mountain lions, and other small game were caught and either roasted, baked, or dried. Gathering was a family activity, and group mobility was timed to take advantage of seasonal ripening of specific resources, including roots, wild onion, wild sweet potato, Indian potato, berries, and a variety of nuts, in addition to the acorn.

The Nisenan technology was dependent upon naturally occurring materials including stone, bone, shell, wood, plant fiber and animal products. All tools, clothing and gear depended upon the acquisition of necessary materials, which were either gathered from natural sources or acquired through trade (such as obsidian, which does not occur in Nisenan territory). Trade and exchange links reached into the Great Basin and west to the Pacific where the only sources of marine shell occur (Hull 2007; Kroeber 1976; Wilson and Towne 1978).

Beals (1933:362-363) observes that the land above about 3,500 feet above mean sea level (AMSL) was rarely entered by any Nisenan except those from mountain communities bordering the high country and was considered open land. He notes that parties visiting the area in the summer would have rarely spent more than four or five days in a single camp (1933:363). Much of the APE falls within this range of "open land" and would have been jointly used by all the people dwelling along its margins.

Washoe

Neighboring the Nisenan to the east were the Washoe, speakers of a language classified among the Hokan languages of North America. Their core territory centered on montane valleys including Sierra Valley northeast of the FERC Project Boundary, the Lake Tahoe Basin southeast of the FERC Project Boundary, and Antelope Valley south of Lake Tahoe (d'Azevedo

1986:468). The Washoe also claimed an extended range around these core areas with visits reported as far west as Auburn in the Proposed Project vicinity (d'Azevedo 1986). The Washoe have been classified as a Californian people by Kroeber (1976). The Washoe language was initially thought to be a unique, isolated language stock; however, linguists now classify it as a member of the widely dispersed Hokan language family. Other Hokan groups were also located in northern and southern California and along the California coast (Shipley 1978).

The Washoe reportedly descended from the northeastern end of the APE to collect acorns along the Bear and Yuba rivers. They may have also wintered on the western slope occasionally, either with Nisenan acquaintances or in small camps (d'Azevedo 1986; Peters 1988). Ethnographic accounts indicate a somewhat looser social organization among the Washoe than among the Nisenan, with less emphasis on suprafamilial relationships (d'Azevedo 1986).

Conflict with neighboring groups was infrequent and probable external relations cannot be thoroughly evaluated due to the sparse nature of ethnographic information. d'Azevedo summarizes the relations of the Washoe with their neighbors as generally peaceable (1986). Beals also notes friendly relationships between Nisenan dwelling in the Project vicinity and the Washoe (1933:366).

Washoe technology and subsistence, like that of the Nisenan, was dependent upon the natural production and use of regionally available materials including wood, bone, stone and fiber. These materials occurred throughout their territory or were obtained through exchange or trade, like marine shell. The eastern Sierra supported populations of bighorn sheep, mule deer, antelope and the ubiquitous blacktailed jackrabbit while the major streams contained significant populations of trout species, all of economic importance to the Washoe. d'Azevedo states that the majority of the Washoe tended to remain near their home ranges, wintering together and dispersing into smaller mobile groups in the spring and summer. Some small groups with specific purposes likely penetrated the higher ranges and western slopes of the Sierra for specific plants or animals or perhaps for trade purposes with the Mountain Nisenan (Beals 1933; D'Azevedo 1986).

While there were definite differences between the Washoe and the Nisenan concepts of land tenure, these would have had little effect in the use of the Sierran regions above 3,500 feet AMSL. With observation of proper etiquette, areas to the west would also have been open to Washoe use (d'Azevedo 1986:467).

Regulatory Context

CEQA was amended in 2014 by Assembly Bill 52 (AB 52), which created a new category of CEQA considered resources, Tribal cultural resources (TCRs), and established a detailed, stepwise process for a CEQA lead agency to consult⁶ with California Native American Tribes

⁶ For purposes of AB 52, "consultation" has the same meaning as provided in Section 65352.4 of the Government Code: Consultation means the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance.

that are traditionally and culturally affiliated with the geographic area of a proposed project. As defined in Public Resources Code Section 21074, TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are included or eligible for inclusion in the California Register of Historical Resources (CRHR) or are included in a local register of historical resources. TCRs are also resources determined by the lead agency, “in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of [Public Resources Code] Section 5024.1,” considering significance of the resource to a California Native American Tribe. As described at Public Resources Code Section 21074(b), a cultural landscape that meets these criteria is a TCR “to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.”

Identifying the Tribes that are traditionally and culturally affiliated with the geographic area of a project is necessary in order to complete AB 52 consultation pursuant to Public Resources Code Section 21080.3.1, which requires notification to these Tribes and consultation, if requested by individual Tribes. The purpose of AB 52 consultation is to determine whether TCRs are present within a project area, to determine whether the project will significantly impact any such resources identified in accordance with Public Resources Code Section 21084.2, and if so, to determine the most appropriate way to avoid or mitigate those impacts.

Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency must determine that one of the following has occurred: (1) the AB 52 consultation process has concluded; (2) the tribe requested AB 52 consultation but has failed to provide comments to the lead agency or otherwise failed to engage in the consultation process; or (3) the tribe failed to request consultation within 30 days of being notified by the lead agency about the project under AB 52 (California Public Resources Code Section 21082.3(d)). Regarding item 1 above, under AB 52, the consultation is considered concluded when: (1) the parties agree to measures to mitigate or avoid significant effects on a tribal cultural resource; or (2) a consulting party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (California Public Resources Code Section 21080.3.2(b)).

AB 52 Consultation for the Proposed Project

On July 9, 2024, NID initiated the AB 52 consultation process by notifying Tribes that are traditionally and culturally affiliated with the geographical area of the Proposed Project (See Table 3.21-1) of the opportunity for consultation regarding TCRs related to the Proposed Project. On July 10, 2024, the Mooretown Rancheria of Maidu Indians responded with a request for consultation. On July 18, 2024, the Colfax-Todds Valley Consolidated Tribe responded with a request for consultation. On July 29, 2024, the United Auburn Indian Community also responded with a request for consultation. No other Tribes requested consultation under AB 52 in response to the 2024 outreach. NID began AB 52 consultation with these three Tribes on July 31, 2024.

Table 3.21-1. List of Tribes Contacted for the Opportunity to Consult

Colfax-Todds Valley Consolidated Tribe of the Colfax Rancheria	Enterprise Rancheria-Estom Yumeka Maidu Tribe
Greenville Rancheria	Ione Band of Miwok Indians

Mechoopda Indian Tribe of Chico Rancheria	Mooretown Rancheria of Maidu Indians of California
Nevada City Rancheria	Strawberry Valley Band of Pakan'yani Maidu
Todds Valley Miwok-Maidu Cultural Foundation	Tsi Akim Maidu of Taylorsville Rancheria
United Auburn Indian Community	Washoe Tribe of Nevada and California

NID attended a meeting with the United Auburn Indian Community (UAIC) on September 12, 2024, to introduce the Proposed Project, provide a brief description of studies completed for the Proposed Project, including previous cultural resource and Traditional Cultural Property (TCP) studies, and to discuss the Tribe's preferences for conducting AB 52 consultation. As a result of this meeting, NID provided the UAIC with copies of previous cultural resource study reports, descriptions of new disturbance areas for the Proposed Project, recreation facility as-built design drawings, shapefiles of the Proposed Project APE, details on Proposed Project reservoir water level elevations, and Exhibit E of the FLA for the Proposed Project. An additional call was held on November 7, 2024, to discuss information needs for the UAIC to conduct their TCR survey for the Proposed Project. Archaeological survey coverage, cultural resource locations, and the average fluctuation zones for the Proposed Project reservoirs was subsequently provided to the UAIC for their use in developing an appropriate TCR survey strategy for the Proposed Project. As discussed at these meetings, the UAIC will: 1) complete necessary TCR identification and CRHR evaluation efforts; 2) assess Proposed Project impacts to TCRs eligible for inclusion in the CRHR; and 3) provide NID proposed mitigation measures for any identified TCRs that have the potential to be significantly impacted by the Proposed Project. Currently, the UAIC is still identifying and assessing TCRs.

NID attended a meeting with the Colfax-Todds Valley Consolidated Tribe on September 30, 2024, to introduce the Proposed Project, provide a brief description of studies completed for the Proposed Project, including cultural resource and Traditional Cultural Property (TCP) studies, and to continue the conversation of AB 52 consultation with the Colfax-Todds Valley Consolidated Tribe. As a result of this meeting, APE maps and recreation facilities plans for the Proposed Project were provided to the Colfax-Todds Valley Consolidated Tribe. As discussed at the meeting, the Tribe was going to review the materials provided and then the Tribe and NID would try to meet again to discuss any resources or areas of concern. To date, no additional meetings, information needs, or details on areas/resources of concern have requested and/or shared with NID.

Outreach to the Mooretown Rancheria of Maidu Indians has been conducted via email and phone call. To date, however, no response has been received from Mooretown Rancheria of Maidu Indians.

Tribal consultation under AB 52 is ongoing and will be concluded as described in the section above.

Previous Tribal-Related Studies

NID conducted several cultural resources studies from 2006-2011 as part of the FERC relicensing process for the Proposed Project, including a Native American Traditional Cultural

Properties (TCP) Study. According to the 1998 National Register Bulletin 38, which was utilized for this study, “A traditional cultural property, then, can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community” (Parker and King 1998:1). TCPs can be a location associated with traditional beliefs of a Native American Tribe, a place of religious or cultural importance to a Native American Tribe, or a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historical identity. According to the definitions of TCPs and TCRs, these resource types are similar in that they can (TCPs) or do (TCRs) represent a tangible resource of value to a Native American Tribe.⁷ As such, the findings of NID's TCP study completed for the FERC relicensing efforts are described here due to their relevancy and similarity to TCRs.

NID conducted a Native American TCP study from 2006 to 2011 as part of the FERC relicensing for the Proposed Project. The study included contacting the Native American Heritage Commission (NAHC) for lists of potentially interested tribes and individuals and important tribal resources that may be documented in the NAHC's Sacred Lands files. The study also included conducting background, archival, and literature research; field visits; oral interviews with tribal informants; and NRHP evaluation and reporting. The TCP study included the participation of the United Auburn Indian Community, Colfax-Todds Valley Consolidated Tribe, Todds Valley Miwok-Maidu Cultural Foundation, Nisenan Maidu, Washoe Tribe of Nevada and California, Tsi-Akim Maidu, Shingle Springs Band of Miwok Indians, and Greenville Rancheria of Maidu Indians. The results of the study are provided in a study report that was provided to participating Tribes for review and comment (Davis-King 2011). The TCP report includes confidential information provided by tribal informants and was filed with FERC as privileged. Thus, the report is provided only on a need-to-know basis. A public summary that describes the methods and results of the TCP study, but that omits the privileged information, is provided in the Final License Application in Section 6.8 of Exhibit E. The TCP study resulted in the identification of no TCPs within the FERC Project Boundary, and thus it was determined that no known TCPs would be affected by the Proposed Project.

As described in Section 3.8, *Cultural Resources*, NID also developed an HPMP (NID 2012) to guide the management of cultural resources and to address potential impacts to historic properties during the term of the new FERC license that includes avoidance, protection, monitoring, and mitigation measures. The HPMP was developed in consultation with Native American tribes, Tahoe National Forest, BLM, and the SHPO.

NID understands that locational and other information about TCPs, TCRs, or any historical resources can result in irreparable vandalism or other damages to these resources. As a result, locational information about these resources is kept confidential, as further described in Section 3.8.

⁷ However, the investigations into TCRs are a CEQA requirement, while investigations into TCPs are generally related to a federal agency's Section 106 of the National Historic Preservation Act compliance requirements.

3.21.2 Impact Analysis

Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

As described above, the Proposed Project AB 52 consultation with Native American Tribes is ongoing. Through the Proposed Project AB 52 consultation, Native American Tribes have stated there are known TCRs within the FERC Project Boundary, however, the locations of these TCRs have not been shared with NID and therefore, the Proposed Project's impacts to these known TCRs have not been fully assessed.

The Proposed Project involves the continued operations of existing structures and would be generally consistent with existing operations. NID would maintain the Proposed Project facilities in the same manner as under the current license. However, as stated in Section 2.3.1, *Proposed Facilities*, NID proposes to construct new, or expand existing, recreation facilities or structures. Additionally, NID proposes to construct a new powerhouse and five new streamflow gauges. At the time of this CEQA analysis, construction details are not available for the Rollins Powerhouse No. 2. Since these activities are not well-defined, additional CEQA analysis may be required in the future once plans are defined for the construction of the new powerhouse.

Because the Proposed Project does not routinely involve ground-disturbing activities outside of ongoing maintenance activities such as routine maintenance of the facilities, vegetation management, and road maintenance, which are consistent with existing conditions, no impacts are expected for as yet unidentified TCRs related to routine operations and maintenance.

However, TCR identification in the FERC Project Boundary is ongoing through consultation, and the potential exists for unidentified TCRs to be encountered, identified, and affected during the life of the FERC license for the Proposed Project. Mitigation measure **MM-TCR-1** is proposed to avoid, minimize, and reduce potential impacts to unidentified TCRs. MM-TCR-1 requires implementation of specific clauses within the Historic Properties Management Plan, as well as additional feedback through the AB 52 consultation process from the Native American Tribes, on how to handle and treat the discovery of unknown tribal cultural resources. Therefore, with the implementation of MM-TCR-1, the Proposed Project would have a **less than significant impact with mitigation incorporated** on unknown tribal cultural resources.

Mitigation Measures:

MM-TCR-1 – Discovery of Tribal Cultural Resources. In accordance with the provisions provided with Section 5.8 through 5.11 of the HPMP, consultation will occur with Native American tribes on an activity-by-activity basis to ensure TCRs are identified. If a resource is determined to be a TCR as defined by the Public Resources Code, Section 20174, during consultation under Sections 5.9 through 5.11 of the HPMP, appropriate TCR-specific measures will be developed consistent with Public Resources Code Section 21084.3, and impacts will be reduced to a less than significant level pursuant to Section 5.10 through 5.12 of the HPMP.

Impact TCR-2: Would the project cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

As stated above in Impact TCR-1, AB 52 consultation and the identification and assessment of Proposed Project impacts on TCRs is in progress. NID is conducting AB 52 consultation according to CEQA requirements with California Native American tribes traditionally and culturally affiliated within the geographic area of the FERC Project Boundary.

The Proposed Project involves the continued operations of existing structures and would be generally consistent with existing operations. NID would maintain the Proposed Project facilities in the same manner as under the current license. However, as stated in Section 2.3.1, *Proposed Facilities*, NID proposes to construct new, or expand existing, recreation facilities or structures. Additionally, NID proposes to construct a new powerhouse and five new streamflow gauges. At the time of this CEQA analysis, construction details are not available for the Rollins Powerhouse No. 2. Since these activities are not well-defined, additional CEQA analysis may be required in the future once plans are defined for the construction of the new powerhouse.

Because the Proposed Project does not routinely involve ground-disturbing activities outside of ongoing maintenance activities such as routine maintenance of the facilities, vegetation management, and road maintenance, which are consistent with existing conditions, no impacts are expected for as yet unidentified TCRs related to routine operations and maintenance.

As stated under Impact TCR-1, TCR identification is ongoing through consultation, and the potential exists for unidentified TCRs to be encountered, identified, and affected during the life of the FERC license for the Proposed Project. Mitigation measure **MM-TCR-1** is proposed to avoid, minimize, and reduce potential impacts to unidentified TCRs. MM-TCR-1 requires implementation of specific clauses within the Historic Properties Management Plan, as well as additional feedback through the AB 52 consultation process from the Native American Tribes, on how to handle and treat the discovery of unknown tribal cultural resources. Therefore, with the implementation of MM-TCR-1, the Proposed Project would have a **less than significant impact with mitigation incorporated** on unknown tribal cultural resources.

Mitigation Measures:

MM-TCR-1 – Discovery of Tribal Cultural Resources. See above.

3.22 Utilities/Service Systems

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
UTIL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
UTIL-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
UTIL-3: Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
UTIL-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
UTIL-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.22.1 Environmental Setting

The Proposed Project is located in Sierra, Placer, and Nevada counties and does not include areas that have been urbanized. As a result, many rural communities and residents in the FERC Project Boundary use well water and septic systems. Electricity is generated by facilities on-site, and is sold under power sales agreements to PG&E and the Northern California Power Agency (NID 2025). This power is generated at impoundments which also allow management of water within Proposed Project reservoirs. Wastewater is handled on site, primarily by vault facilities, which are pumped out periodically and waste is shipped to off-site treatment facilities with capacity for disposal. Landfills operated within Nevada, Placer, and Sierra Counties include the Western Regional Sanitary Landfill in Lincoln, Placer County; Clipper Creek in Applegate, Placer County; Eastern Regional Landfill in Truckee, Placer County; Loyalton Landfill in Loyalton, Sierra County, and the McCourtney Landfill in Grass Valley, Nevada County (EPA 2024).

3.22.2 Impact Analysis

Under the proposed Chicago Park Powerhouse Motoring measure, NID would make a good faith effort to avoid non-routine planned outages of the Chicago Park powerhouse from May 1 through September 15 each year.

Impact UTIL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

As discussed in [Section 2.3.1](#) of this document, *Proposed Facilities*, NID's Proposed Project would expand the existing Rollins Development through the addition of Rollins No. 2 Powerhouse; add five new streamflow gages; roadway modifications; and replace, upgrade, or install new recreation facilities, including but not limited to new parking areas, day-use areas, new/expanded campgrounds, restrooms, and information signage. Construction details are not available for the Rollins Powerhouse No. 2 at the time of this analysis, and may require additional review when details are available.

The Proposed Project would not increase the residential, commercial, or industrial uses in the FERC Project Boundary. Therefore, the Proposed Project would not require the construction or expansion of water, electrical, natural gas, telecommunications, wastewater treatment or other utilities and resources. Therefore, the Proposed Project would have **no impact**, and no mitigation is required.

Impact UTIL-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The Proposed Project would not use any municipal water sources. Water used for routine maintenance or long-term operations would continue to come from rivers or wells in the FERC Project Boundary, within NID's allotted water rights, and no modifications to NID's water rights would be needed for the Proposed Project under the new license.

As stated in Section 3.17, Population/Housing, the purpose of the Proposed Project is to continue to provide a source of hydroelectric power and serve as a water supply for both domestic and irrigation purposes for NID. Issuance of a new license would allow NID through the Proposed Project to meet downstream consumptive water demands of both NID and PCWA. Minimum instream flow and reservoir minimum pool measures included in NID's Proposed Project were developed to provide adequate protection, mitigation and enhancement to affected resources, while protecting NID's water supply reliability consistent with the projected service needs. NID approved an Urban Water Management Plan (NID 2020) which includes NID's existing water supplies, projected supplies, and the strategy for meeting future water demands based on California Department of Finance population projections. The Proposed Project is consistent with projected water demands identified for this plan in the NID service area. Therefore, sufficient water supplies would be available to serve the Proposed Project and any reasonably foreseeable future growth during normal, dry, and multiple dry years. As a result, **no impact** would occur, and no mitigation is required.

Impact UTIL-3: Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The Proposed Project is not part of a larger wastewater system and does not include wastewater treatment facilities. The only wastewater facilities within the FERC Project Boundary and that are part of the Proposed Project are vault toilets in recreation areas. These vault toilets are periodically pumped, and waste is shipped to off-site treatment facilities with capacity for disposal. Recreation upgrades may require some additional vault toilet installation, which would be serviced in the same manner as the existing vault toilets with the Proposed Project facilities. No other development is proposed as part of the Project that would require additional wastewater treatment, nor is the Proposed Project expected to encourage such development. Therefore, the Proposed Project would have **no impact** on wastewater treatment availability, and no mitigation is required.

Impact UTIL-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction details are not available for the Rollins Powerhouse No. 2 at the time of this analysis. Construction of the new powerhouse may generate substantial solid waste. When construction details are available, additional impact analysis may be required. Construction of the proposed recreation upgrades would temporarily generate solid waste during construction but any waste generated would be within the capacity of local and regional infrastructure limits. Operations and maintenance of the Proposed Project would be generally consistent with existing conditions; however, once recreation facilities are expanded as a part of the Proposed Project, capacity for the generation of solid waste may increase. However, the need for solid waste disposal services is not expected to increase significantly under the Proposed Project improvements and any such increase would still continue to be disposed of at county landfills as reflected in the Recreation Facilities Plan. Therefore, the Proposed Project would result in a **less than significant impact**, and no mitigation is required.

Impact UTIL-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Routine maintenance and long-term operation activities associated with the Proposed Project would continue as they are currently and would continue to adhere to all federal, state, and local statutes related to solid waste. Improvements to recreation areas are not expected to generate a substantial amount or type of solid waste that would create difficulties in compliance with local, state, or federal statutes regarding disposal. All waste produced by the Proposed Project would be managed according to relevant statutes.

Construction details are not available for the Rollins Powerhouse No. 2 at the time of this analysis. Construction of the new powerhouse may generate substantial solid waste. When construction details are available, additional impact analysis may be required. Therefore, the Proposed Project would have **no impact** on compliance with solid waste regulations, and no mitigation is required.

3.23 Wildfire

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>				
WILDFIRE-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
WILDFIRE-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
WILDFIRE-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
WILDFIRE-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

3.23.1 Environmental Setting

The California Department of Forestry and Fire Protection (CAL FIRE) has rated areas within California for their potential fire hazards. To quantify this potential risk, CAL FIRE has developed a fire hazard severity scale to predict the damage a fire is likely to cause. This scale includes ratings: moderate, high, and very high and is applied to areas where the state is responsible for managing fire hazards, or State Responsibility Areas. Areas where fire hazard is managed by another entity are referred to as Federal Responsibility Areas and Local Responsibility Areas. There are no Local Responsibility Areas in the FERC Project Boundary.

Most of the area occupied by the Proposed Project that the state of California is responsible for managing fire hazards on qualifies as Very High Fire Hazard Severity Zones, as defined by CAL FIRE (CAL FIRE 2023a, 2023b, 2023c). Other areas within the FERC Project Boundary are Federal Responsibility Areas managed by the Forest Service and BLM, including the Tahoe National Forest; however, as these are interspersed with State Responsibility Areas rather than isolated from them, this analysis assumes a consistent rating of Very High Fire Severity Zones throughout those areas.

3.23.2 Impact Analysis

The Proposed Project includes the implementation of the Fire Prevention and Response Plan conditioned in Forest Service Condition 62 and BLM Condition 40. This plan is filed separately with FERC under Accession Number 201311215036.

Impact WILDFIRE-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?

The Proposed Project includes no expansion of footprint, no alteration to circulation patterns or travel routes, and no significant alteration of operations. Implementation of the Proposed Project would not impair adopted emergency response plans or emergency evacuation plans compared to existing conditions. Please see Impact TRANSP0-4 of Section 3.20.2, Transportation, for additional analysis. As a result, the Proposed Project would result in **no impact**, and no mitigation is required.

Impact WILDFIRE-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The Proposed Project involves the hydroelectric facilities and reservoirs within the FERC Project Boundary located in the Sierra Nevada Mountains and foothills. The FERC Project Boundary does not include notable concentrations of residents. Most occupants would be working or recreating in the area and could be evacuated in the event of a wildfire. Further, implementation of the Proposed Project would not involve the expansion of the FERC Project Boundary to include additional occupants, nor would it induce such growth. Implementation of new license articles and the associated Fire Prevention and Response Plan would reduce potential wildfire risks and impacts within the FERC Project Boundary. Operations and maintenance activities of the Proposed Project would also remain generally consistent with existing conditions, which would not exacerbate wildfire risks. As such, implementation of the Proposed Project would not exacerbate the possibility of wildfire risks. As such the Proposed Project would neither exacerbate wildfire risks nor expose project occupants to pollutants from a wildfire or the uncontrolled spread of same. Therefore, the Proposed Project would result in **no impact**, and no mitigation is required.

Impact WILDFIRE-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

As the Proposed Project includes minor construction activities, routine maintenance and long-term operations with no significant change to the existing FERC Project Boundary. No additional infrastructure would be required to be installed as part of the Proposed Project or to maintain fire hazard awareness or prevention. Implementation of new license articles and the associated Fire Prevention and Response Plan would reduce potential wildfire risks and impacts within the FERC Project Boundary. As such, the Proposed Project would require no additional infrastructure that could exacerbate fire risk. Therefore, the Proposed Project would result in **no impact**, and no mitigation is required.

Impact WILDFIRE-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The FERC Project Boundary contains multiple operating dams through which it regulates flow of its constituent rivers this action limits many potential severe and diverse effects downstream. Under the Proposed Project these dams would continue to operate and manage such downstream impacts. The Proposed Project operations include minimal changes to drainage patterns and would result in minimal change in runoff, as it requires limited ground disturbance or impervious surfaces in areas that have not been disturbed. Implementation of new license articles and the associated Fire Prevention and Response Plan would also reduce potential wildfire risks and impacts within the FERC Project Boundary. Therefore, the Proposed Project would have a **less than significant impact** to the exposure of people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and no mitigation is required.

3.24 Mandatory Findings of Significance

Environmental Issue Area:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
MFS-1: Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
MFS-2: Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
MFS-3: Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

3.24.1 Impact Analysis

Impact MFS-1: Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The Proposed Project would involve limited construction activities, routine maintenance and ongoing operations of facilities. O&M of the Proposed Project would not greatly differ from existing O&M. The new license requires implementation of new articles, PM&E measures, management plans, and BLM and FS 4(e) conditions on BLM and FS lands to provide environmental protection as part of the Proposed Project. Nonetheless, the Proposed Project was found to have potentially significant impacts on biological resources, recreation resources, and TCRs as described in the aforementioned sections. However, with the various conditions and plans of the new license as well as mitigation measures presented in this document, the Proposed Project would result in a **less than significant impact with mitigation incorporated** on the environment.

Mitigation Measures: See Section 3.7.2, *Biological Resources*, Section 3.10.2, *Geology and Soils*, and Section 3.21.2, *Tribal Cultural Resources*.

Impact MFS-2: Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The river basins of the Proposed Project are very complex hydrological systems with various jurisdictions and service providers other than NID managing facilities and water rights. The other three hydroelectric projects included in the FEIS are located in the vicinity of the Proposed Project and consist of the Upper Drum-Spaulding, Deer Creek, and Lower Drum Hydroelectric Projects, which were all owned by PG&E at the time of the FEIS and are interconnected with the Proposed Project.

Since the 2014 FEIS, PG&E and the NID filed a joint application to transfer the Deer Creek Hydroelectric Project facilities and license from PG&E to NID on January 22, 2019. On October 10, 2019, the California Public Utilities Commission approved the sale of Deer Creek Hydroelectric Project, which is awaiting FERC's final approval. NID will be responsible for CEQA compliance for relicensing of, or other actions regarding, the Deer Creek Hydroelectric Project (SWRCB 2024). NID would coordinate offsetting cumulative impacts between the Proposed Project and the Deer Creek Hydroelectric Project.

NID's Plan for Water is a public collaboration process to determine the best ways to meet the community's demand for water over the coming decades (NID 2024). The Deer Creek Hydroelectric Project will be included in the Plan for Water and cumulative effects will be accounted for in relation to the Proposed Project. The Plan for Water within NID's jurisdiction includes the following objectives:

- Assess our water situation together
- Develop a deeper understanding of subsequent impacts to community interests and the community's future
- Provide a forum for community members to offer their input
- Focus on overarching policies and not on specific projects
- Understand what is really important to the community and why
- Create a 50-year plan using the best information available at this time

According to FERC in FEIS Section 3.2, *Scope of Cumulative Effects Analysis*, other activities in the area that could interact with the Upper Drum-Spaulding, Lower Drum, Deer Creek, and Yuba-Bear Projects to affect resources cumulatively include other hydroelectric projects and water diversions in the Yuba and Bear River Basins. In addition, non-project diversions and withdrawals by other users affect instream flows in project-affected reaches. NID and PCWA are the two largest water providers with non-project diversions from project-affected reaches and canals.

Many of the hydroelectric projects in the region are also seeking license renewals. Therefore, the potential exists for adjacent projects to have cumulative impacts from activities associated with the Proposed Project and anticipated activities associated with the remaining FEIS hydroelectric projects, such as the Upper-Drum Spaulding and Lower Drum Hydroelectric

Projects, as described in the 2014 FEIS and/or Yuba Water Agency's Yuba River Development Project as described in FERC and USACE's FEIS (FERC and USACE 2019). These separate projects are not described in this CEQA analysis but are expected to have similar types of routine maintenance and operations and similar measures meant to protect the environment in their licenses that were developed during their relicensing processes (i.e., increased minimum instream flows and resources specific management/monitoring plans). As these projects are hydraulically linked, particularly in the Yuba and Bear River watersheds, modifications to flows within the river basins by all operators and water rights holders could collectively have cumulative impacts to fisheries and water quality, but it is speculative at this time to be able to determine those potential effects without knowing the conditions of each new license in the system. Therefore, as noted above, with the implementation of the various conditions and plans of NID's new license as well as mitigation measures presented in this document, the Proposed Project is expected to result in a **less than significant impact with mitigation incorporated** on the environment and is not anticipated to result in cumulative considerable effects.

Mitigation Measures: See Section 3.7.2, *Biological Resources*, Section 3.10.2, *Geology and Soils*, and Section 3.21.2, *Tribal Cultural Resources*.

Impact MFS-3: Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

NID's existing Yuba-Bear hydroelectric project's original license was effective in 1963. The purpose of the original license and the Proposed Project is to continue to provide a source of hydroelectric power and serve as a water supply for both domestic and irrigation purposes for NID, as well as allow NID to generate electricity for the term of the license. The issuance of a new license and acceptance of the Proposed Project would involve implementation of PM&E measures, 4(e) conditions, and license conditions as well as routine maintenance and continued operation of the Proposed Project. The Proposed Project would also result in recreation upgrades that would have a beneficial impact on people who use recreation facilities in the FERC Project Boundary. As described in the previous sections within this document, no activities associated with the Proposed Project would either directly or indirectly cause a substantial adverse impact on human beings. Therefore, the Proposed Project would have **no impact**, and no mitigation is required.

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Chapter 2

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endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-map-2022/fire-hazard-severity-zones-maps-2022-files/fhsz_county_sra_11x17_2022_placer_2.pdf

3.24 Mandatory Findings of Significance

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Appendix A.

Biological Resources Information



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

12/30/2024 21:21:25 UTC

Project Code: 2025-0036654

Project Name: Yuba-Bear

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0036654

Project Name: Yuba-Bear

Project Type: Water Supply Facility - New Constr

Project Description: FERC relicense

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.49042785,-120.54666323466984,14z>



Counties: Nevada , Placer , and Sierra counties, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Wolf <i>Canis lupus</i> Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is final critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
North American Wolverine <i>Gulo gulo luscus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: Species may be present based on transient occurrence as it moves through or too suitable habitat. Effects should be considered to species and projects should consult with the Service, however, depending on the project, consultation may not be necessary. Species profile: https://ecos.fws.gov/ecp/species/5123	Threatened
Sierra Nevada Red Fox <i>Vulpes vulpes necator</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4252	Endangered

BIRDS

NAME	STATUS
California Spotted Owl <i>Strix occidentalis occidentalis</i> Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266	Proposed Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle <i>Actinemys marmorata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Sierra Nevada Yellow-legged Frog <i>Rana sierrae</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9529	Endangered

FISHES

NAME	STATUS
Lahontan Cutthroat Trout <i>Oncorhynchus clarkii henshawi</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

CONIFERS AND CYCADS

NAME	STATUS
Whitebark Pine <i>Pinus albicaulis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Sierra Nevada Yellow-legged Frog <i>Rana sierrae</i> https://ecos.fws.gov/ecp/species/9529#crithab	Final

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Eliza Schlein
Address: 505 14th Street
Address Line 2: Suite 1100
City: Oakland
State: CA
Zip: 94612
Email: eliza.schlein@hdrinc.com
Phone: 5613128095



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Haypress Valley (3912055) OR English Mtn. (3912045) OR Graniteville (3912046) OR Blue Canyon (3912036)) AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Accipiter atricapillus</i> American goshawk	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	6,300 6,700	433 S:3	0	2	0	0	0	1	3	0	3	0	0
<i>Ambystoma macrodactylum sigillatum</i> southern long-toed salamander	G5T4 S2	None None	CDFW_SSC-Species of Special Concern	4,629 7,300	611 S:9	0	0	0	0	0	9	7	2	9	0	0
<i>Aplodontia rufa californica</i> Sierra Nevada mountain beaver	G5T3T4 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	5,900 6,400	131 S:5	0	4	0	0	0	1	1	4	5	0	0
<i>Bombus occidentalis</i> western bumble bee	G3 S1	None Candidate Endangered	IUCN_VU-Vulnerable USFS_S-Sensitive	6,700 6,700	306 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Botrychium crenulatum</i> scalloped moonwort	G4 S3	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	6,482 6,482	155 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Carex davyi</i> Davy's sedge	G3 S3	None None	Rare Plant Rank - 1B.3 SB_UCSC-UC Santa Cruz	7,000 7,000	34 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Carex lasiocarpa</i> woolly-fruited sedge	G5 S2	None None	Rare Plant Rank - 2B.3 IUCN_LC-Least Concern	4,950 4,950	20 S:1	1	0	0	0	0	0	0	1	1	0	0
<i>Corallorhiza trifida</i> northern coralroot	G5 S1	None None	Rare Plant Rank - 2B.1	5,500 5,700	7 S:3	2	0	1	0	0	0	0	3	3	0	0
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	3,500 3,500	635 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Desmona bethula</i> amphibious caddisfly	G2G3 S2S3	None None		6,200 6,200	17 S:1	0	0	0	0	0	1	1	0	1	0	0



Summary Table Report
California Department of Fish and Wildlife
California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Ecclisomyia bilera</i> Kings Creek ecclisomyian caddisfly	G2 S2	None None		6,200 6,200	4 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Empidonax traillii</i> willow flycatcher	G5 S3	None Endangered	IUCN_LC-Least Concern USFS_S-Sensitive	5,700 5,700	90 S:1	1	0	0	0	0	0	1	0	1	0	0
<i>Epilobium howellii</i> subalpine fireweed	G4 S4	None None	Rare Plant Rank - 4.3	6,675 6,675	99 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Erethizon dorsatum</i> North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	5,725 5,725	523 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Erigeron miser</i> starved daisy	G3? S3?	None None	Rare Plant Rank - 1B.3 SB_UCSC-UC Santa Cruz USFS_S-Sensitive	5,100 7,300	34 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Eriogonum umbellatum var. torreyanum</i> Donner Pass buckwheat	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCSC-UC Santa Cruz USFS_S-Sensitive	6,300 7,020	23 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Farula praelonga</i> long-tailed caddisfly	G1G2 S1S2	None None		0 0	2 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Gulo gulo</i> wolverine	G4 S1	Threatened Threatened	CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	5,970 5,970	174 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Haliaeetus leucocephalus</i> bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	5,700 7,300	333 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Lasionycteris noctivagans</i> silver-haired bat	G3G4 S3S4	None None	IUCN_LC-Least Concern		139 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lepus americanus tahoensis</i> Sierra Nevada snowshoe hare	G5T3T4Q S2	None None	CDFW_SSC-Species of Special Concern	6,200 6,200	15 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Martes caurina sierrae</i> Sierra marten	G4G5T3 S3	None None	USFS_S-Sensitive	5,480 7,500	149 S:9	0	0	0	0	0	9	8	1	9	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Monadenia mormonum buttoni</i> Button's Sierra sideband	G2T1T2 S1S2	None None	IUCN_DD-Data Deficient	4,500 4,500	5 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Ochotona princeps schisticeps</i> gray-headed pika	G5T4 S2S4	None None		6,695 6,695	332 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Oncorhynchus clarkii henshawi</i> Lahontan cutthroat trout	G5T3 S2	Threatened None	AFS_TH-Threatened CDFW_SSC-Species of Special Concern	5,280 6,480	27 S:2	1	0	1	0	0	0	2	0	2	0	0
<i>Oreostemma elatum</i> tall alpine-aster	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz USFS_S-Sensitive	6,700 6,700	29 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Pekania pennanti</i> Fisher	G5 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	5,400 6,500	555 S:4	0	0	0	0	0	4	4	0	4	0	0
<i>Penstemon personatus</i> closed-throated beardtongue	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz USFS_S-Sensitive	5,000 5,550	26 S:2	1	1	0	0	0	0	0	2	2	0	0
<i>Phacelia stebbinsii</i> Stebbins' phacelia	G3 S3	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	5,100 5,600	79 S:2	1	1	0	0	0	0	1	1	2	0	0
<i>Picoides arcticus</i> black-backed woodpecker	G5 S2	None None	IUCN_LC-Least Concern	6,700 6,700	62 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Poa sierrae</i> Sierra blue grass	G3 S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive USFS_S-Sensitive	4,700 4,700	129 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Potamogeton praelongus</i> white-stemmed pondweed	G5 S2	None None	Rare Plant Rank - 2B.3 IUCN_LC-Least Concern	6,200 6,200	12 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Rana boylii pop. 3</i> foothill yellow-legged frog - north Sierra DPS	G3T2 S2	None Threatened	BLM_S-Sensitive USFS_S-Sensitive	2,804 5,800	237 S:11	1	4	0	0	1	5	7	4	10	1	0
<i>Rana sierrae</i> Sierra Nevada yellow-legged frog	G2 S2	Endangered Threatened	CDFW_WL-Watch List IUCN_EN-Endangered USFS_S-Sensitive	5,200 7,500	772 S:13	0	0	0	1	7	5	7	6	6	7	0



Summary Table Report
California Department of Fish and Wildlife
California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Rhynchospora alba</i> white beaked-rush	G5 S2	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	6,107 6,158	17 S:2	1	0	0	0	0	1	0	2	2	0	0
<i>Schoenoplectus subterminalis</i> water bulrush	G5 S3	None None	Rare Plant Rank - 2B.3 IUCN_LC-Least Concern	4,950 4,950	32 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Strix nebulosa</i> great gray owl	G5 S1	None Endangered	CDF_S-Sensitive IUCN_LC-Least Concern USFS_S-Sensitive	6,600 7,200	79 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Viola tomentosa</i> felt-leaved violet	G3 S3	None None	Rare Plant Rank - 4.2	5,140 5,500	54 S:4	0	1	0	1	0	2	4	0	4	0	0



CNPS Rare Plant Inventory

Search Results

27 matches found. Click on scientific name for details

Search Criteria: , Quad is one of [3912055:3912045:3912046:3912036]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
<i>Botrychium crenulatum</i>	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S3	2B.2		1984-01-01	 © 2016 Steve Matson
<i>Botrychium minganense</i>	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	Jul-Sep(Oct)	None	None	G5	S4	4.2		1994-01-01	 © 2011 Aaron E. Sims
<i>Carex davyi</i>	Davy's sedge	Cyperaceae	perennial herb	May-Aug	None	None	G3	S3	1B.3		1974-01-01	No Photo Available
<i>Carex lasiocarpa</i>	woolly-fruited sedge	Cyperaceae	perennial rhizomatous herb	Jun-Jul	None	None	G5	S2	2B.3		1980-01-01	 © 2011 Sierra Pacific Industries
<i>Corallorhiza trifida</i>	northern coralroot	Orchidaceae	perennial rhizomatous herb (achlorophyllous)	Jun-Jul	None	None	G5	S1	2B.1		1994-01-01	 © 2021 Scot Loring
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	None	None	G4	S4	4.2		1980-01-01	 © 2013 Scot Loring

<i>Darlingtonia californica</i>	California pitcherplant	Sarraceniaceae	perennial rhizomatous herb (carnivorous)	Apr-Aug	None	None	G4	S4	4.2			1980-01-01	 © 2021 Scot Loring
<i>Engellaria obtusa</i>	obtuse starwort	Caryophyllaceae	perennial rhizomatous herb	May-Sep(Oct)	None	None	G5	S4	4.3			1988-01-01	 ©2014 Kirsten Bovee
<i>Epilobium howellii</i>	subalpine fireweed	Onagraceae	perennial stoloniferous herb	Jul-Aug	None	None	G4	S4	4.3	Yes		1994-01-01	No Photo Available
<i>Erigeron miser</i>	starved daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	1B.3	Yes		1974-01-01	No Photo Available
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	Donner Pass buckwheat	Polygonaceae	perennial herb	Jul-Sep	None	None	G5T2	S2	1B.2	Yes		1974-01-01	No Photo Available
<i>Hartmaniella sierrae</i>	Sierra starwort	Caryophyllaceae	perennial rhizomatous herb	May-Aug	None	None	G3G4	S3S4	4.2	Yes		2004-01-01	No Photo Available
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i>	Hutchison's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	None	None	G3G4T3Q	S3	3.2	Yes		2001-01-01	 Dean Wm. Taylor 2006
<i>Lycopus uniflorus</i>	northern bugleweed	Lamiaceae	perennial herb	Jul-Sep	None	None	G5	S4	4.3			1980-01-01	 © 2021 Scot Loring
<i>Meesia triquetra</i>	three-ranked hump moss	Meesiaceae	moss	Jul	None	None	G5	S4	4.2			2001-01-01	 Steve Matson 2008
<i>Oreostemma elatum</i>	tall alpine-aster	Asteraceae	perennial herb	Jun-Aug	None	None	G2	S2	1B.2	Yes		2001-01-01	No Photo Available
<i>Peltigera gowardii</i>	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)		None	None	G4?	S3	4.2			2014-03-01	 © 2021 Scot Loring
<i>Penstemon personatus</i>	closed-throated beardtongue	Plantaginaceae	perennial herb	Jun-Sep(Oct)	None	None	G2	S2	1B.2	Yes		1974-01-01	No Photo Available

<i>Phacelia stebbinsii</i>	Stebbins' phacelia	Hydrophyllaceae	annual herb	May-Jul	None	None	G3	S3	1B.2	Yes	1974-01-01	No Photo Available
<i>Poa sierrae</i>	Sierra blue grass	Poaceae	perennial rhizomatous herb	Apr-Jul	None	None	G3	S3	1B.3	Yes	2010-06-10	 © 2012 Belinda Lo
<i>Potamogeton praelongus</i>	white-stemmed pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	Jul-Aug	None	None	G5	S2	2B.3		1994-01-01	 ©2011 Sierra Pacific Industries
<i>Rhynchospora alba</i>	white beaked-rush	Cyperaceae	perennial rhizomatous herb	Jun-Aug	None	None	G5	S2	2B.2		1974-01-01	 © 2021 Scot Loring
<i>Schoenoplectus subterminalis</i>	water bulrush	Cyperaceae	perennial rhizomatous herb (aquatic)	Jun-Aug(Sep)	None	None	G5	S3	2B.3		1980-01-01	 Dean Wm. Taylor (1996)
<i>Sidalcea gigantea</i>	giant checkerbloom	Malvaceae	perennial rhizomatous herb	(Jan-Jun)Jul-Oct	None	None	G3	S3	4.3	Yes	2012-07-10	 ©2018 Sierra Pacific Industries
<i>Silene occidentalis</i> ssp. <i>occidentalis</i>	Western campion	Caryophyllaceae	perennial herb	Jun-Aug	None	None	G4T3	S3	4.3	Yes	2010-03-04	 ©2011 Sierra Pacific Industries
<i>Vaccinium coccineum</i>	Siskiyou Mountains huckleberry	Ericaceae	perennial deciduous shrub	Jun-Aug	None	None	G3Q	S3	3.3		1974-01-01	No Photo Available
<i>Viola tomentosa</i>	felt-leaved violet	Violaceae	perennial herb	(Apr)May-Oct	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available

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Suggested Citation:

California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website <https://www.rareplants.cnps.org> [accessed 20 March 2025].

Appendix B.

October 2022 AIR Responses to the FERC FLA Filing



Nevada Irrigation District

October 31, 2022

Electronically Filed

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 – 1st Street, N.E.
Washington, D.C. 20426-0001

**SUBJECT: Yuba-Bear Hydroelectric Project, FERC Project No. 2266-102 – California.
Response to Item 4 in FERC's March 8, 2021, Additional Information
Request, as Amended on May 17, 2022**

Dear Secretary Bose,

This letter provides to the Federal Energy Regulatory Commission (FERC or Commission) Nevada Irrigation District's (NID) response to Item 4 in the Commission's March 8, 2021, Additional Information Request (AIR), as amended on May 17, 2022, dealing the protection of Endangered Species Act (ESA)-listed fishes in the Yuba River downstream of the United States Department of the Army, Corps of Engineers, Harry L. Englebright Dam.

BACKGROUND

The Commission's March 8, 2021, AIR letter requested NID provide four informational items associated with NID's relicensing of its Yuba-Bear Hydroelectric Project, FERC Project Number 2266 (P-2266), needed by FERC to support its preparation of a supplemental environmental impact statement and revised biological assessment to complete FERC's ESA Section 7 consultation with the United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). Item 1 requested 2020 economic information for P-2266. Item 2 requested information regarding the effects on P-2266 generation and costs and NID's water deliveries if FERC includes in the P-2266 new license Condition 1(D) in the California State Water Resources Control Board's (State Water Board) August 14, 2020, Clean Water Act Section 401 Water Quality Certification (WQC) for P-2266 and includes in new licenses for Pacific Gas and Electric Company's (PG&E) Upper Drum Spaulding Hydroelectric Project (P-2310) and Lower Drum Hydroelectric Project (P-14531) Condition 1(D) in the State Water Board's February 3, 2021, WQC for those projects. Item 3 requested an assessment of the environmental and recreational effects, including flows, average daily water temperatures and seven-day average daily maximum (7DADM) water temperatures under four scenarios – *"unimpaired scenario, base case (i.e., final EIS' no-action alternative) scenario, a scenario reflecting the staff alternative with mandatory conditions described in the final EIS, and a scenario reflecting the staff alternative with mandatory conditions combined with condition 1(D) of the final WQCs."* Item 4 directed NID to consult with the PG&E and the Yuba County Water Agency (YCWA) to determine an equitable allocation of water from NID's P-2266, PG&E's P-2310 and P-14530 and Deer Creek Hydroelectric Project (P-14530), and YCWA's Yuba River Development Project (P-2246) to maintain cooler water in the lower Yuba River in dry and/or critically dry years, or a combination of dry type years, from July through November for the protection of ESA-listed fishes and their designated critical habitat in the Yuba River. In a May 17, 2022, letter, FERC

*Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
October 31, 2022
Page 2 of 3*

modified Item 4 to: 1) remove a requirement to conduct ESA informal consultation with NMFS; 2) add NMFS and the California Department of Fish and Wildlife to the parties with whom NID must consult; and 3) direct NID to file a report with FERC by October 31, 2022.

On June 7, 2021, NID filed with FERC the information requested in Items 1 and 2 and in Item 3 as it pertains to the Middle Yuba and South Yuba rivers upstream of Englebright Reservoir. On December 7, 2021, NID filed with FERC the information requested in Item 3 as it pertains to the lower Yuba River and the Feather River, Sacramento River and the Sacramento-San Joaquin Delta where effects of P-2266 occur.

In a letter dated May 17, 2022, FERC requested supplemental information regarding NID's December 7, 2021, response to Item 3. NID filed with FERC the supplemental information on June 6, 2022.

INFORMATION PROVIDED IN THIS FILING

Attachment 1 to this letter provides to FERC the information requested in Item 4, as amended. The attachment includes a Summary followed by an introduction (Section 1). Section 2 describes the consultation NID undertook to develop the Item 4 information requested by FERC, Section 3 describes the methods and approaches NID used to develop the information, and Section 4 provides the results of NID's analysis. Section 5 describes potential P-2266 operational actions considered by NID and NID's assessment of the potential benefit of each alternative to meet FERC's desired outcome. Section 6 includes NID's response to YCWA's claim that NID's P-2266's harms YCWA's 2246 ability to maintain cooler water in the lower Yuba River from July through November during drier years and YCWA's capacity to generate hydroelectricity during the most valuable periods of the year. Section 7 describes P-2266, P-2310 and P-2246 operational actions that NID recommends FERC order to protect ESA-listed fishes in the lower Yuba River. Attachment 1 includes five appendices (i.e., A through E), each of which is described in Attachment 1. The appendices are filed via U.S. Mail with FERC on a digital versatile disk, (i.e., not eFiled) because some of the file types and size are not accommodated by FERC's eFile system.

If you have any questions regarding this letter and attachments, please contact me.

Sincerely,

DocuSigned by:

C319E970BA65462...

Jennifer Hanson
General Manager
Nevada Irrigation District
1036 West Main Street
Grass Valley, CA 95945

*Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
October 31, 2022
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Attachments:

- Nevada Irrigation District's Information in Response to Item 4 Schedule A – Additional Information - in FERC's March 8, 2021, Letter, as Revised by FERC's May 17, 2022, Letter
- Digital Versatile Disc Containing Appendices to Attachment 1.

cc: Kelly Wolcott, FERC Project Coordinator
Parties on FERC's Official Service List for the for the Yuba-Bear Hydroelectric Project (FERC Project No. 2266-102)

ATTACHMENT 1

NEVADA IRRIGATION DISTRICT'S INFORMATION IN RESPONSE TO ITEM 4 SCHEDULE A – ADDITIONAL INFORMATION - IN FERC'S MARCH 8, 2021, LETTER, AS REVISED BY FERC'S MAY 17, 2022, LETTER

SUMMARY

The Nevada Irrigation District (NID) consulted with the Pacific Gas and Electric Company (PG&E), the Yuba County Water Agency (YCWA), the United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), and the California Department of Fish and Wildlife (California DFW), regarding alternatives to protect Endangered Species Act (ESA)-listed fishes in the lower Yuba River¹ in dry and/or critically dry years, or a combination of dry type years. NID, in close coordination with PG&E, made four model runs (i.e., scenarios) to assess the potential effects of NID's Yuba-Bear Hydroelectric Project (P-2266 or YB) on ESA-listed fishes. These included: 1) Scenario 1, All Baseline (YB, UDS, LD & YRDP); 2) Scenario 2, All FEIS (YB, UDS, LD & YRDP); 3) Scenario 3, YB Effect (YB Baseline and UDS, LD & YRDP FEIS); and 4) Scenario 4, Unimpaired (YB, UDS, LD & YRDP Unimpaired, Englebright, Daguerre Point and P-1403 Baseline).² NID used the scenarios and other information to carefully evaluate various P-2266 alternatives. The results of NID's efforts and NID's recommendations are provided in this attachment. As a general summary:

- **P-2266 is not likely to adversely affect ESA-listed fishes from July through November in dry and critically dry years.** Operations of P-2266 under existing conditions (i.e., Scenario 1, All Baseline) and under the conditions likely at this time to be included in a new license for P-2266 (i.e., Scenario 2, All FEIS) would have a positive effect on ESA-listed fishes in the lower Yuba River from July through November in dry and critically dry years as compared to unimpaired conditions (i.e., Scenario 4, All Unimpaired). While a slight reduction in the number of river miles with suitable water temperature for ESA-listed fishes may occur under Scenario 3 as compared to Scenario 2, the reduction in river miles would be extremely small - usually a reduction of 500 to 1,000 feet - with many river miles of suitable habitat unaffected. This extremely small reduction in river miles with suitable water temperature due to P-2266 would likely have an insignificant and discountable adverse effect, if any effect occurred at all, on ESA-listed fishes. P-2266's overall effect

¹ The 24.3 miles of the Yuba River from Englebright Dam to the Yuba River's confluence with the Feather River is referred to as the "lower Yuba River" or "LYR."

² For modeling nomenclature abbreviations, NID used "YB" to mean NID's P-2266, "UDS" to mean PG&E's P-2310, "LD" to mean PG&E's P-14530, and "YRDP" to mean YCWA's P-2246.

from July through November in dry and critically dry years is not likely to adversely affect ESA-listed fishes

- **NID recommends the Federal Energy Regulatory Commission (FERC or Commission) not require additional flow releases from P-2266 for the protection of ESA-listed fishes from July through November in dry and critically dry years.** Since NID's P-2266's operation under Scenarios 2 and 3 is not likely to adversely affect ESA-listed fishes, NID's P-2266 has no role in an equitable allocation of additional flow releases (i.e., releases in addition to those that are already stipulated in Final Environmental Impact Statements (FEIS) prepared for relicensing) to the lower Yuba River, assuming equitable means commensurate with effects, from July through November in dry and critically dry years. NID considered three general alternatives regarding P-2266, which are summarized below.
 - **Alternative 1: P-2266 additional releases from July through November in dry and critically dry years.** Additional P-2266 releases from July through November in dry and critically dry years would not benefit ESA-listed fishes because NID's P-2266 has no ability to provide cooler water to the lower Yuba River from July through November in dry and critically dry years. Additional P-2266 releases exceeding those already contemplated by Scenario 2 would, by the time the water reached the lower Yuba River, be warmer than the water in the lower Yuba River.
 - **Alternative 2: P-2266 additional releases in spring of dry and critically dry years.** Additional P-2266 releases exceeding those already contemplated by Scenario 2 in spring of dry and critically dry years would not provide additional benefits because Scenario 2 already would add 25,764 acre-feet to YCWA's Yuba River Development Project (P-2246 or YRDP) storage in dry and critically dry years, and there is no evidence that additional flows in those year types would produce additional benefits. The basis of NID's conclusion are:
 - ✓ P-2246 has, under existing conditions (i.e., Scenario 1), an adequate amount of available cold water in New Bullards Bar Reservoir to release downstream if additional releases are needed. As stated by YCWA, under existing conditions "*Temperature range at intake depth for September is 46.0°F to 49.2°F.*"
 - ✓ The amount of cold water available to YCWA under existing conditions will increase when new licenses are issued for NID's P-2266 and PG&E's Upper Drum-Spaulding Project (P-2310 or UDS), which collectively on average will add by September in dry and critically dry years 25,764 acre-feet of new water to YCWA's P-2246's storage.
 - ✓ YCWA's operation of the P-2246 Colgate Powerhouse Upper Intake, as required by the State Water Resources Control Board's (State Water Board) Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) for P-2246,³ will

³ The State Water Resources Control Board's Clean Water Act Section 401 certification issued for P-2246 is currently the subject of ongoing litigation at the State Water Board, the California Court of Appeal and the Federal District Court for the Eastern District of California, and is likely to be the subject of a Petition for Review to the United States Supreme Court. The validity and conditions of the WQC are at issue in one or more of these ongoing proceedings.

preserve the existing P-2246's New Bullards Bar Reservoir's cold-water pool for use in summer months.

- ✓ YCWA's construction and operation of the P-2246's Narrows 2 Intake Extension, as required in the State Water Board's 2003 Revised Decision 1644, will provide additional cold water for release to the lower Yuba River.
- **Alternative 3: P-2266 facility modifications.** Modifying NID's P-2266's facilities in any fashion would have no benefit to ESA-listed fishes because, even under high flows, the releases, which are approximately 40 miles upstream of Englebright Reservoir, reach equilibrium temperature and are warmer than the water in the lower Yuba River well before the water enters Englebright Reservoir.
- **NID's Recommendations, for the reasons described below, are:**
 - NID recommends FERC not require any operational actions, including releasing additional flow, in NID's new license for P-2266.
 - NID recommends FERC not require any operational actions, including releasing additional flow, in PG&E's new license for the Upper Drum-Spaulding Hydroelectric Project (P-2310).
 - NID concludes that the best and proper alternative for protecting ESA-listed fishes in the lower Yuba River from July through November in dry and critically dry years, if such releases are deemed needed, is for FERC to include in YCWA's new license for P-2246 the following conditions:
 - ✓ Consult with NMFS, the United States Department of the Interior, Fish and Wildlife Service (USFWS) and California DFW to prioritize use of YCWA's P-1403's Narrows 1 Powerhouse over its P-2246's Narrows 2 Powerhouse as needed for the benefit of ESA-listed fishes from July through November in dry and critically dry years.
 - ✓ Consistent with Condition 7 in the State Water Board's P-2246 WQC, prioritize use of New Colgate Powerhouse Tunnel upper intake from March 1 through May 31 and consult with NMFS, USFWS and California DFW to determine which New Colgate Power Tunnel Intake to use during the remainder of the year. NID notes that FERC could require YCWA operate the Upper Intake now since the Upper Intake is a facility under P-2246's existing license.
 - ✓ Consistent with the State Water Board's Revised Decision 1644, extend the Narrows 2 Powerhouse Intake to a lower elevation in Englebright Reservoir and consult with NMFS, USFWS and California DFW regarding use of the lower intake from July through November in dry and critically dry years. NID notes that the State Water Board could require YCWA to construct the Intake Extension now since it was ordered in 2003.
 - ✓ NID does not recommend that that FERC require additional flow releases from P-2246 because NID believes the physical modification described above, which are already requirements of YCWA, would provide cooler water in the lower Yuba River in dry and critically dry years. However, if FERC determines that YCWA's

P-2246 must make additional releases into the lower Yuba River from July through November in dry and critically dry years, P-2246 can do so without harm by NID's P-2266. To make such releases, YCWA could, at its discretion:

- Utilize some of the existing storage in New Bullards Bar Reservoir, which YCWA otherwise releases now as discretionary, for additional releases from July through November in dry and critically dry years.
 - Retain some of the New Bullards Bar Reservoir water YCWA currently releases for water sales before July and utilize that water for such additional releases from July through November in dry and critically dry years.
 - Utilize some or all of the average of 25,764 acre-feet of additional new water that will be contributed by NID's P-2266 and PG&E's P-2310 to P-2246 storage under Scenario 2 conditions to YCWA's New Bullards Bar Reservoir in dry and critically dry years To make additional releases, if required.
 - A combination of the above.
- **YCWA's claim of harm is unsupported.** Refer to Section 6 below for a detailed discussion.

1 INTRODUCTION

1.1 **FERC's March 8, 2021, Additional Information Request**

In a letter dated March 8, 2021, FERC requested NID provide four informational items associated with NID's P-2266 needed by FERC to support FERC's preparation of a supplemental environmental impact statement and a revised biological assessment to complete FERC's ESA Section 7 consultation with NMFS.⁴ Item 1 requested 2020 economic information for P-2266. Item 2 requested information regarding the effects on P-2266 generation and costs and NID's water deliveries if FERC includes in the P-2266 new license Condition 1(D) in the State Water Board's August 14, 2020, WQC for P-2266⁵ and includes in new licenses for PG&E's P-2310 and Lower Drum Hydroelectric Project (P-14531 of LD) Condition 1(D) in the State Water Board's February 3, 2021, WQC for those projects.⁶ Item 3 requested an assessment of the environmental and recreational effects, including flows, average daily water temperatures and seven-day average daily maximum (7DADM) water temperatures under four scenarios – "*unimpaired scenario, base*

⁴ FERC's March 8, 2021, letter is available in FERC's ELibrary at accession numbers 20210308-3038.

⁵ State of California, State Water Resources Control Board (State Water Board). 2020. In the Matter of Water Quality Certification for Nevada Irrigation District, Yuba-Bear Hydroelectric Project, Federal Energy Regulatory Commission Project No. 2266, Sources: South Yuba River, Middle Yuba River, Bear River, Counties: Sierra, Nevada, and Placer, Water Quality Certification for Federal Permit or License. Issued August 14, 2020. Available in FERC's ELibrary at accession number 20200814-5141.

⁶ State of California, State Water Resources Control Board (State Water Board). 2021. In the Matter of Water Quality Certification for In the Matter of Water Quality Certification for Pacific Gas and Electric Company Upper Drum-Spaulding Hydroelectric Project and Lower Drum Hydroelectric Project, Federal Energy Regulatory Commission Project Nos. 2310 and 14531, Sources: South Yuba River, Bear River, and North Fork of the Forth Fork American River and Tributaries, Counties: Nevada and Placer, Water Quality Certification for Federal Permit or License. Issued February 3, 2021. Available in FERC's ELibrary at accession number 20210212-0023

case (i.e., final EIS' no-action alternative) scenario, a scenario reflecting the staff alternative with mandatory conditions described in the final EIS, and a scenario reflecting the staff alternative with mandatory conditions combined with condition 1(D) of the final WQCs.”

On June 7, 2021, NID filed with FERC the information requested in Items 1 and 2 and in Item 3 as it pertains to the Middle Yuba and South Yuba rivers upstream of the United States Department of the Army, Corp of Engineer's (USACE) Harry L. Englebright Dam and Reservoir. On December 7, 2021, NID filed with FERC the information requested in Item 3 as it pertains to the lower Yuba River and the Feather River, Sacramento River and the Sacramento-San Joaquin Delta where effects of P-2266 occur. In a letter dated May 17, 2022, FERC requested supplemental information regarding NID's response to Item 3.⁷ NID filed with FERC the supplemental information on June 6, 2022.⁸

Item 4 in FERC's March 8, 2021, AIR letter directed NID to consult with PG&E and YCWA to determine an equitable allocation of water from NID's P-2266, PG&E's P-2310, P-14530 and Deer Creek (P-14531 of DC) hydroelectric projects, and YCWA's P-2246^{9, 10} to maintain cooler water in the lower Yuba River in dry and/or critically dry years, or a combination of dry type years, from July through November for the protection of ESA-listed fishes and their designated critical habitat. Specifically, Item 4 in FERC's March 2021 AIR letter states:

In its comments on our BA, Yuba County Water Agency (YCWA) notes that it has been required to maintain a set of minimum instream flows in the Yuba River downstream of New Bullards Bar Dam, and as such, is required to compensate for the effect of other projects' water exports on streamflows during the January to June period. This limits YCWA's ability to store cooler water in New Bullards Bar Reservoir during the January to June period when New Bullards Bar Reservoir storage is below the flood pool (which sometimes happens during drier years). These upper basin transfers restrict YCWA's ability to maintain cooler water in the river from July through November during drier years when water temperatures are more constraining for listed fish. It also constrains its capacity to generate hydroelectricity during the most valuable periods of the year.

To evaluate the equitable allocation of the water that is needed in the Yuba River basin to protect ESA-listed fish species and their designated critical habitat, please consult and develop an agreed-upon analysis of the amount of additional water from either storage or transfers necessary in dry and/or critically dry years (or combination of dry type years) to maintain cooler water in the Yuba River from July through November. At a minimum, the analysis should include:

⁷ FERC's May 17, 2022, letter is available in FERC's ELibrary at accession numbers 20220517-3056.

⁸ NID's June 7, 2022, filing is available in FERC's ELibrary at accession number 20220606-5268.

⁹ NID, PG&E and YCWA are collectively referred to as the "Licensees" in this attachment.

¹⁰ NID's P-2266 and PG&E's P-2310, P-14530 and P-14531 are collectively referred to as the "Upstream Projects" in this attachment.

- a. a detailed description of the potential operational actions that would be needed at each project (by water year type) to ensure the maintenance of any required flow and water temperature conditions needed to protect ESA-listed fish species and their designated critical habitat; and
- b. an explanation of the triggers (water year conditions) that would be used to determine the need for these flow-related measures.

After the analysis is completed, please conduct informal consultation with NMFS along with PG&E and NID, to determine that the potential operational actions at each project considered in the evaluation would be protective of ESA-listed fish species and their designated critical habitat in the Yuba River downstream of Englebright dam. By this letter, we are designating YCWA [*sic*] as the Commission's non-federal representatives for carrying out informal consultation, pursuant to section 7 of the Endangered Species Act.

“Equitable” in the context of FERC’s March 8, 2021, letter means commensurate with each project’s effects on ESA-listed fishes in the lower Yuba River. FERC concluded in its December 19, 2014, Final Environmental Impact Statement (FEIS) for the Upstream Project (FERC 2014¹¹) that:

While the Yuba-Bear, Upper Drum-Spaulling, Deer Creek, and Lower Drum Projects may have a cumulative effect on flows in the lower Yuba River, the direct effects of interbasin water transfer on water temperature and aquatic habitat are negligible given: (1) the effects of solar heating over the 41 miles of South Yuba River between Spaulling dam and Englebright reservoir and the nearly 45 miles of Middle Yuba River between Milton diversion dam and the confluence with North Yuba River; (2) the relatively large volume of inflow to Englebright reservoir from North Yuba River compared to the Middle and South Yuba Rivers; and (3) the relatively short distance (less than 2 miles) between the non-project New Colgate powerhouse and Englebright reservoir for the effects of ambient air temperatures and solar incidence to increase water temperatures associated with the discharge from the North Yuba River.

(FERC 2014, F-0244.) (emphasis added.)

Thus, comprehensive environmental review has already determined that operation of NID’s P-2266 and PG&E’s P-2310, P-14539 and P-14531 have only negligible impacts on water temperature and aquatic habitat in the lower Yuba River. Accordingly, it would not be equitable for NID and PG&E to suffer the water supply consequences that would result from additional

¹¹ Federal Energy Regulatory Project (FERC). 2014. Final Environmental Impact Statement for Hydropower License: Upper Drum-Spaulling Hydroelectric Project – FERC Project No. 2310-193, Lower Drum Hydroelectric Project – FERC Project No. 14531-000, Deer Creek Hydroelectric Project – FERC Project No. 14530-000, Yuba-Bear Hydroelectric Project – FERC Project No. 2266-102, California. Issued December 19, 2014. The 2014 FEIS is available in FERC’s ELibrary at accession number 20141219-4003.

contributions to lower Yuba River flows when the operation of their respective projects are not responsible for any direct negative effects on that reach of the river.

In its May 17, 2022, letter, FERC modified AIR Item 4 to: 1) remove the requirement to conduct ESA informal consultation with NMFS; 2) add NMFS and California DFW to the parties with whom NID must consult; and 3) direct NID to file a report with the Commission by October 31, 2022. Specifically, FERC's May 2022 letter states:

Since our original request was made in March 2021, NID has not completed any of the actions under item 4. Because we need the information for our environmental analysis and to make acquisition of the data more efficient and timely, we are hereby revising the original item 4 request to: (1) remove the requirement to consult with NMFS that NID proposed to begin doing in January 2023 and, (2) add NMFS and California DFW as additional consulting parties along with PG&E and YCWA to evaluate the aforementioned water allocation. We believe that our revised consultation request can be sufficiently completed and the information filed within about 6 months, and therefore, there is no need for an extension until December 31, 2023. In summary, please file the information related to the AIR item 4 model scenarios by October 31, 2022. In addition, please invite NMFS and California DFW to participate in the development of alternatives for item 4.

NID focused on NID's P-2266 in this filing. When referring to PG&E's projects, NID usually means PG&E's P-2310. While PG&E's P-14530 and P-14531 may affect flows in the Yuba River basin because their operations are hydraulically connected to NID's P-2266 and PG&E's P-2310 facilities in the Bear River, PG&E's P-14530 and P-14531 facilities do not make planned releases into the Middle or South Yuba rivers upstream of Englebright Dam. In addition, this filing references, at least in part, YCWA's Narrows Hydroelectric Project (P-1403) because its operations affects flows and water temperatures in the lower Yuba River. Figure 1-1 shows NID's P-2266, PG&E's P-2310 and YCWA's P-2246 and P-1403 primary facilities in the Yuba River basin.

Nevada Irrigation District
Yuba-Bear Hydroelectric Project
FERC Project No. 2266

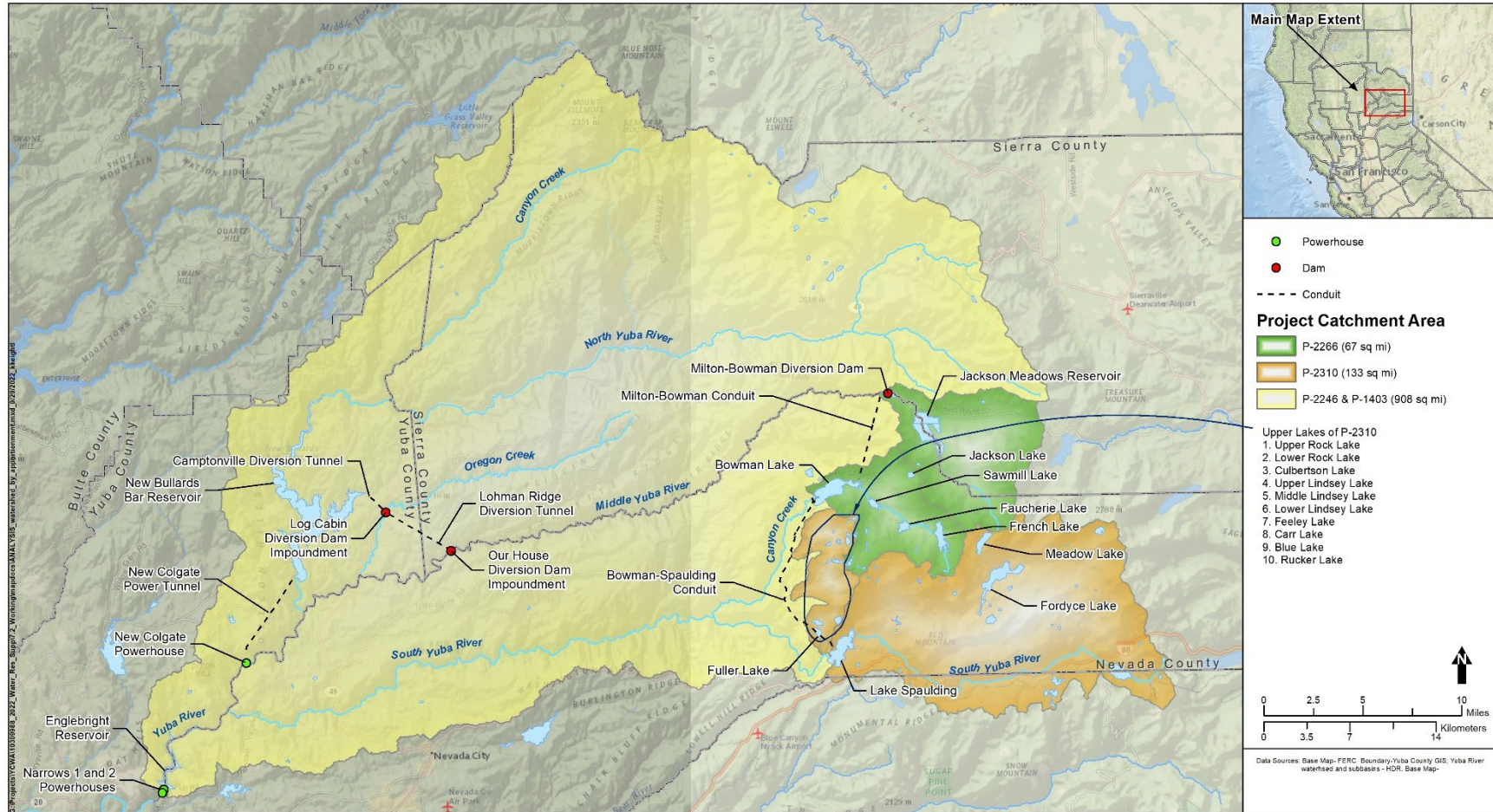


Figure 1-1. NID's P-2266, PG&E's P-2310 and YCWA's P-2246 and P-1403 primary facilities in the Yuba River basin and drainage areas associated with the hydroelectric projects.

Provided below is background information regarding Englebright Dam and Reservoir and the lower Yuba River. Section 2 in this attachment provides a summary of the consultation NID undertook to develop the Item 4 information requested by FERC, Section 3 describes the methods and approaches NID uses to develop the information, and Section 4 describes the results of NID's analysis. Section 5 describes potential P-2266 operational actions considered by NID and NID's assessment of the potential benefit of each alternative to protect ESA-listed fishes in the lower Yuba River. Section 6 includes NID's response to YCWA's claim that NID's P-2266's harms YCWA's 2246 ability to maintain cooler water in the lower Yuba River from July through November during drier years and YCWA's capacity to generate hydroelectricity during the most valuable periods of the year. Section 7 describes P-2266, P-2310 and P-2246 operational actions that NID recommends FERC order to protect ESA-listed fishes in the lower Yuba River. This attachment includes five appendices (i.e., A through E), each of which is described below. The appendices are filed with FERC via U.S. Mail on a digital versatile disk, (i.e., not eFiled) because some of the file types and sizes are not accommodated by FERC's eFile system.

1.2 USACE's Harry L. Englebright Dam and Reservoir

All water released from NID's P-2266's facilities in the Yuba River basin passes through the USACE's Englebright Reservoir before entering the lower Yuba River. Water released from P-2266's Milton Diversion Dam on the Middle Yuba River travels approximately 30 miles downstream to YCWA's P-2246's Our House Diversion Dam impoundment where YCWA diverts the water either to its P-2246 New Bullards Bar Reservoir on the North Yuba River or releases it to flow 15 miles, combining with releases from YCWA's facilities, downstream to Englebright Reservoir. On the South Yuba River, NID's P-2266's most downstream releases occur at Bowman-Spaulling Diversion Dam on Canyon Creek and at Bowman-Spaulling Conduit on Texas, Clear Trap and Rucker creeks. Releases from these facilities flow downstream at least 40 miles before entering Englebright Reservoir.

All water released from PG&E's P-2310 passes through Englebright Reservoir before entering the lower Yuba River. Water released from P-2310's Spaulding Dam enters the South Yuba River and flows downstream approximately 41 miles before entering Englebright Reservoir.

YCWA's P-2246's Narrows 2 Powerhouse and Full Bypass and YCWA's P-1403's Narrows 1 Powerhouse utilize water in Englebright Reservoir.

A basic understanding of Englebright Dam and Reservoir and the lower Yuba River, which is provided below, is important to understand how releases from NID's P-2266, PG&E's P-2310 and YCWA's P-2246 and P-1403 individually and collectively affect ESA-listed anadromous fishes and their designated critical habitat in the lower Yuba River. Figure 1-1 shows a portion of the Yuba River basin drainage area, which equates to approximately 1,339 square miles at the confluence with the Feather River. The drainage area at Englebright Dam is 1,108 square miles. The drainage area in square miles and percent of drainage area upstream of Englebright Dam controlled by each project is:

Relative Drainage Areas:

- **67 square miles** (6.0%). Drainage area controlled by NID's P-2266
- **133 square miles** (12.0%). Drainage area controlled by PG&E's P-2310
- **908 square miles** (82.0%). Drainage area controlled by YCWA's P-2246 and P-1403 excluding NID's P-2266 and PG&E's P-2310 areas

1.2.1 Englebright Dam

Englebright Dam, which is a high variable radius concrete arch dam approximately 1,142 feet wide and 260 feet high with a center spillway crest with an invert elevation of 528 feet, impounds Englebright Reservoir. The primary purpose of the dam is to trap and contain sediment derived from extensive historic hydraulic mining operations in the Yuba River watershed. The dam was constructed by the California Debris Commission in 1941 and is a complete physical barrier to the upstream movement of anadromous fishes – the dam does not include fish passage facilities nor does the USACE operate a fish passage program at the dam and reservoir. Since the primary purpose of the dam is debris capture, it does not include a low-level outlet. However, when constructed the dam included an intake structure and tunnel that are still part of USACE's Englebright Dam's facilities. The tunnel connects to YCWA's P-1403's Narrows 1 Powerhouse Tunnel. When the California Debris Commission was decommissioned in 1986, administration of Englebright Dam and Reservoir passed to the USACE. In 2014, NMFS issued a "Letter of Concurrence" for the Englebright Dam, in which NMFS concurred with USACE's 2013 Biological Assessment for that dam. NMFS agreed with USACE that USACE's proposed action at Englebright Dam was not likely to jeopardize ESA-listed species. (NMFS 2014.¹²)

1.2.2 Englebright Reservoir

Englebright Reservoir at Englebright Dam's spillway crest invert elevation of 528 feet, is about 9 miles long and has a shoreline length and surface area of about 24 miles and 815 acres, respectively. Englebright Reservoir when first constructed had a gross storage capacity of approximately 70,000 acre-feet; however, due to sediment capture, the gross storage capacity in 2003 was estimated to be approximately 50,000 acre-feet (Childs *et al.* 2003¹³). The active storage (i.e., volume of water that YCWA's P-2246 and P-1403 are capable of withdrawing from the reservoir) is approximately 38,000 acre-feet, which equates to the volume of water between the spillway crest invert elevation and the bottom invert elevation of YCWA's P-2246's Narrows 2 Powerhouse and Full Bypass Intake at 439 feet. The invert elevation of the USACE Tunnel Intake in Englebright Reservoir is 21 feet higher at elevation 460 feet. According to YCWA, it normally operates Englebright Reservoir between elevation 523 feet and 517 feet, which equates to approximately 3,800 acre-feet of storage. The volume of the dead pool in Englebright Reservoir is approximately 12,200 acre-feet that equates to the volume of water between P-2246's Narrows

¹² United States Department of the Interior, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). 2014. Letter from William W. Stelle, Jr., NMFS Regional Administrator, to Michael J. Farrell, Colonel, USACE Commander. Letter dated May 12, 2014.

¹³ Childs, Jonathan R., Snyder, Noah P., Hampton, Margaret A. 2003, Bathymetric and geophysical surveys of Englebright Lake, Yuba-Nevada Counties, California: U. S. Geological Survey Open-File Report 03-383, 20 pp., <http://pubs.usgs.gov/of/2003/0383/>.

2 Intake and Full Bypass bottom invert elevation at 439 feet and the bottom of the reservoir at approximately elevation 329 feet at the dam. Englebright Dam and Reservoir do not include non-federal hydropower works and, therefore, are not under the FERC's jurisdiction.

Englebright Reservoir typically has a no stratification in winter with stratification beginning in the spring. During summer, a thermocline generally develops from 10 to 30 feet deep with the strongest stratification usually from August through January. In summer, surface water temperatures can be as warm as 23°C (73.4 degrees Fahrenheit [°F]) and hypolimnetic temperatures range between 8° and 12°C (46.4° and 53.6°F) (YCWA 2021.¹⁴)

Following construction of Englebright Dam and PG&E's construction of P-1403 in 1941 until 1970 when YCWA's P-2246 began operation, PG&E made controlled flow releases for power generation from Englebright Reservoir through its Narrows 1 Powerhouse. From 1970 through 2008, controlled flow releases for power generation and water supply were made from Englebright Reservoir from a combination of the P-1403's Narrows 1 Powerhouse and YCWA's P-2246's Narrows 2 Powerhouse. YCWA added the Narrows 2 Full Bypass to its P-2246 release facilities in 2008. NID understands that YCWA now prioritizes operating its P-1403 Narrow 1 Powerhouse to meet downstream water demands and uses its P-2246 Narrows 2 Powerhouse and Full Bypass to meet any downstream water demands in excess of the Narrows 1 Powerhouse maximum capacity of 750 cubic feet per second (cfs).

1.3 Lower Yuba River

YCWA's P-2246's Narrows 2 Powerhouse and Full Bypass are located on the north side of the lower Yuba River immediately downstream of Englebright Dam and YCWA's P-1403's Narrows 1 Powerhouse is located 0.2 miles downstream of the dam on the south bank. Other noteworthy facilities in the lower Yuba River include the United States Geological Survey's (USGS) Smartsville and Marysville streamflow gages at river miles¹⁵ 24.0 and 6.1, respectively; USACE's Daguerre Point Dam at river mile 11.6; and three consumptive withdrawal diversions (i.e., Hallwood-Cordua, South Yuba-Brophy and Browns Valley Irrigation District) upstream of Daguerre Point Dam. Named tributaries from upstream to downstream in the lower Yuba River include Deer, Sanford, Brooks and Dry creeks at river miles 23.4, 18.8, 17.7 and 13.8, respectively.

2 NID's CONSULTATION

2.1 Consultation with PG&E and YCWA

NID met at least 21 times in 2021 and 2022 with PG&E and YCWA, and NID met an additional four times in 2022 with only PG&E to consult and coordinate preparing the information requested by FERC and to discuss potential analyses, approaches and alternatives. Consultation among NID, PG&E and YCWA was conducted under a Non-Disclosure Agreement due to the potential for this

¹⁴ Yuba County Water Agency. 2021. Pre-Application Document. Narrows Hydroelectric Project, FERC Project No. 1403. Issued on January 28, 2021. The document is available in FERC's ELibrary at accession number 20100128-5142.

¹⁵ River miles (RM) in this filing are calculated running upstream along the thalweg from the Yuba River's confluence with the Feather River at RM 0.0 to the base of Englebright Dam at RM 24.3.

issue and related issues to be subject to litigation. Provided below are some of the key milestone consultation events.

- September 2021. NID, PG&E and YCWA formed a Plenary Group composed of NID's General Manager, YCWA's General Manager and PG&E's Senior Manager, Hydro Licensing, to oversee coordination among the Licensees in responding to FERC's AIR. It was agreed the Plenary Group would meet as needed.
- September 2021 through January 2022. The Plenary Group met periodically, primarily to discuss coordination and a schedule for providing information to FERC.
- February 2022. The Plenary Group formed an AIR Joint Technical Working Group (TWG) comprised of NID, PG&E and YCWA staff and consultant operations specialists, modelers and fishery biologists to provide technical assistance, as requested, to a Plenary Group. It was agreed the TWG would meet every other week through October 2022.
- April 18, 2022. The AIR Joint TWG held its first meeting.
- May 2, 2022. The AIR Joint TWG met.
- May 16, 2022. The AIR Joint TWG met.
- May 23, 2022. The AIR Joint TWG met.
- June 6, 2022. The AIR Joint TWG met.
- June 13, 2022. The AIR Joint TWG met.
- June 17, 2022. The NID/PG&E/YCWA Plenary Group met to prepare for consultation with NMFS and California DFW.
- June 21, 2022. The AIR Joint TWG met.
- July 11, 2022. The NID/PG&E/YCWA Plenary Group met.
- July 18, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- July 22, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- July 25, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 1, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 8, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 15, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 22, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 24, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- August 29, 2022. The NID/PG&E/YCWA Plenary Group and AIR Joint TWG met.
- September 8, 2022. The NID/PG&E Plenary Group and their technical support met.
- September 26, 2022. The NID/PG&E Plenary Group and their technical support met.

- October 3, 2022. The NID/PG&E Plenary Group and their technical support met.
- October 6, 2022. The NID/PG&E Plenary Group and their technical support met.

2.2 Consultation with NMFS and California DFW

From July through September 2022, NID, PG&E and YCWA met five times with NMFS and California DFW and NID and PG&E met an additional three times with NMFS and California DFW regarding approaches and alternatives. Provided below are some of the key milestone consultation events. Documentation of the major consultation events is provided in Appendix A to this attachment.

- May 31, 2022. NID, PG&E and YCWA sent an e-mail to NMFS and California DFW soliciting their interest and availability to participate in in-person, bi-weekly consultation meetings.
- May 31, 2022. California DFW confirmed its participation in the consultation meetings.
- June 1, 2022. NMFS confirmed its participation in the consultation meetings.
- June 5, 2022. NID, PG&E and YCWA sent a Microsoft® Team's invite to NMFS and California DFW for bi-weekly consultation meetings from late June through September 2022.
- June 6, 2022. NID, PG&E and YCWA sent a revised Microsoft® Team's invite to NMFS and California DFW for bi-weekly consultation meetings from early July through September 2022.
- July 1, 2022. NID sent a revised Microsoft® Team's invite to NMFS and California DFW for the July 11, 2022, consultation meeting and a meeting agenda focusing on a management level discussion of NMFS and California DFW goals and objectives.
- July 11, 2022 (Consultation Meeting #1). NID, PG&E, YCWA, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- July 20, 2022. NID, PG&E and YCWA sent an e-mail to NMFS and California DFW distributing a summary of Consultation Meeting #1.
- July 20, 2022. YCWA sent a Microsoft® Team's invite and agenda to NMFS and California DFW for the July 25, 2022, consultation meeting.
- July 22, 2022 (Consultation Meeting #2). NID, PG&E, YCWA, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- July 25, 2022. NID, PG&E and YCWA sent an e-mail to NMFS and California DFW distributing a summary for Consultation Meeting #2.
- July 29, 2022. NID, PG&E and YCWA sent e-mails to NMFS and California DFW distributing reference material (i.e., RMT 2010, Bratovich *et al.* 2013 and YSF 2013) from Consultation Meeting #2.

- August 2, 2022. YCWA sent a Microsoft® Team's invite and agenda to NMFS and California DFW for the August 8, 2022, consultation meeting.
- August 8, 2022 (Consultation Meeting #3). NID, PG&E, YCWA, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- August 14, 2022. California DFW sent an e-mail to NID, PG&E and YCWA containing its response to the Licensees' question regarding water temperature metrics.
- August 16, 2022. NID, PG&E and YCWA sent an e-mail to NMFS and California DFW distributing a summary for Consultation Meeting #3.
- August 16, 2022. YCWA sent a Microsoft® Team's invite and agenda to NMFS and California DFW for the August 22, 2022, consultation meeting.
- August 22, 2022 (Consultation Meeting #4). NID, PG&E, YCWA, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- August 24, 2022. NMFS sent an e-mail to NID, PG&E and YCWA concurring with California DFW's August 14, 2022.
- August 29, 2022. YCWA sent an e-mail to NID, PG&E, NMFS and California DFW regarding the August 29, 2022, Consultation Meeting.
- August 29, 2022. NID sent an e-mail to PG&E, YCWA, NMFS and California DFW regarding the August 29, 2022, Consultation Meeting.
- August 29, 2022. PG&E sent an e-mail to NID, YCWA, PG&E, NMFS and California DFW regarding the August 29, 2022, Consultation Meeting.
- August 29, 2022 (Consultation Meeting #5). NID, PG&E, YCWA, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- August 30, 2022. NID and PG&E sent an e-mail to NMFS and California DFW inviting them to participate in consultation meetings with NID and PG&E on September 12 and 19 and October 3, 2022.
- September 8, 2022. NID and PG&E sent an e-mail to NMFS and California DFW confirming the September 12, 2022, consultation meeting and distributing a draft agenda for review.
- September 9, 2022. NID and PG&E sent an e-mail to NMFS and California DFW distributing summaries for Consultation Meetings #4 and #5.
- September 12, 2022 (Consultation Meeting #6). NID, PG&E, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.
- September 16, 2022 (Consultation Meeting #7). NID, PG&E, NMFS and California DFW representatives held a virtual meeting.
- October 3, 2022 (Consultation Meeting #8). NID, PG&E, NMFS and California DFW representatives met at HDR, Inc.'s office in Sacramento, CA.

2.3 Result of Consultation

NID made a good faith effort to reach agreement with PG&E and YCWA on an analysis and alternatives for providing cooler water to support ESA-listed anadromous fishes in the lower Yuba River from July through November in dry and critically dry years. The Licensees' meetings resulted in presentations by the Licensees to NMFS and California DFW regarding conditions in the lower Yuba River and potential alternatives including: 1) YCWA prioritizing use of its P-1403's Narrows 1 Powerhouse over its P-2246's Narrows 2 Powerhouse; 2) YCWA use of its P-2246's Colgate Powerhouse Upper Intake on New Bullards Bar Reservoir (refer to Section 5.2.2. for additional discussion); 3) maintaining the Englebright Reservoir water surface elevation higher in September and October; 4) extending the P-1403's Intake in Englebright Reservoir; and 5) extending the P-2246's Narrows 2 Powerhouse Intake in Englebright Reservoir.¹⁶ Refer to the summaries for Consultation Meetings #2 through #4 in Appendix A for additional details and discussion regarding these potential alternatives. The Licensees clearly stated that the potential alternatives were presented for technical discussion only and were not proposed at that time by any of the Licensees nor had the Licensees agreed on responsibility regarding any potential alternative.

In an email dated August 29, 2022, YCWA advised NID, PG&E, NMFS and California DFW that YCWA had concluded "*there would not be a collaborative proposal to FERC*" and it ceased consulting with NID and PG&E.

NID and PG&E continued their consultation that resulted in agreement between NID and PG&E on an analytical approach, including use of models, post-processing of model data, and format for presentation of data in their respective October 31, 2022, FERC filings. As a result, NID understands that PG&E's October 31, 2022, FERC AIR filing and NID's October 31, 2022, filing contain much of the same information and the information is formatted in the same manner. This filing notes where NID understands the information is similar, if not identical, in the two filings.

At the Licensees' first consultation meeting with NMFS and CDFW the agencies said their goal was to listen and observe and provide value when needed. In the October 3, 2022, consultation meeting (i.e., #8) NID and PG&E presented and discussed with NMFS and CDFW preliminary findings from NID's and PG&E's joint modeling. Key feedback from NMFS and California DFW is highlighted below and included in the Consultation Meeting summaries in Appendix A.

3 METHODS AND APPROACH

As a result of their consultation, NID and PG&E agreed upon an analytical approach. The approach is used by both NID and PG&E and is described below with focus in this filing on NID's P-2266.

¹⁶ At the August 22, 2022, Consultation Meeting #4, YCWA clarified that it had already prioritized use of its P-1403's Narrows 1 Powerhouse over its P-2246's Narrows 2 Powerhouse because the Narrow 1 Powerhouse revenues were greater, and YCWA planned to repair the Colgate Powerhouse Upper Intake (i.e., not the intake shutters, just the intake gate) during a planned outage around 2024.

3.1 Flow and Water Temperature Modeling

To examine the effects of water releases, diversions and storage by NID's P-2266 on ESA-listed fishes and their designated critical habitat in the lower Yuba River, NID made four model runs (i.e., scenarios), each of which is described below.¹⁷ Simulated scenario results, are provided in Appendix B. All results are presented in Microsoft® Excel or Word or USACE's Hydrologic Engineering Center Data Storage Center (HEC-DSS), as appropriate. In addition, simulated water temperatures are included in Appendix B. Scenario outputs include average daily flow, average daily water temperature, daily reservoir storage, and NID's P-2266's daily generation by powerhouse. Post-processing of model scenario results provides information regarding NID's water deliveries, which are provided in Appendix B. Summary tables and figures are provided in the body of this filing wherever helpful. The following sections describes the scenarios summarized in this filing and included in Appendix B.

3.1.1 Scenario 1, All Baseline (YB, UDS, LD & YRDP)

Scenario 1, All Baseline, (YB, UDS, LD & YRDP) in this attachment is identical to Scenario 1LYR, YLYR Baseline (Downstream Area) existing conditions except that in NID's December 7, 2021, filing Scenario 1LYR uses FERC Staff recommendations and Federal Power Act (FPA) Section 4(e) conditions as described in the FERC's and USACE's December 19, 2014, FEIS for P-2246 (FERC and USACE 2019¹⁸) whereas Scenario 1 in this attachment uses P-2246's environmental baseline (i.e., existing) conditions. Both scenarios use existing conditions for NID's P-2266, PG&E's P-2310, P-14530 and P-14531, and YCWA's P-1403. Scenario 1, All Baseline, in this attachment establishes the environmental baseline and all other scenarios in this response are compared to Scenario 1. For clarity, NID's approach to modeling Scenario 1, All Baseline, is described below.

NID understands that Scenario 1, All Baseline (YB, UDS, LD & YRDP) in this filing is identical to Scenario 1, All Baseline (YB, UDS, LD & YRDP) that PG&E included in its October 31, 2022, FERC AIR filing.

¹⁷ At the October 3, 2022, Consultation Meeting, NMFS suggested NID and PG&E consider running a model scenario in which the Upstream Projects were not in place but all other facilities were in place. NID declined to run this scenario for two reasons. First, while not using the exact approach described in this filing, including estimating river miles of suitable water temperatures, NID included this scenario in its December 7, 2021, and June 6, 2022, filings with FERC, as required by FERC. Second, NID believes the scenario would have minimal benefit and is a very unrealistic scenario. No party to the relicensing proceeding has proposed removal of all P-2266 facilities and water delivery facilities, many of which began operations in the 1920's, and, if this were to occur, most communities, including the City of Grass Valley and Nevada City, as well as much of the industry in the upper basin would cease.

¹⁸ Federal Energy Regulatory Project (FERC) and United States Army Corps of Engineers (USACE). 2019. Final Environmental Impact Statement for Hydropower License: Yuba River Development Project - FERC Project No. 2246-065 - California. Issued January 2, 2019. The 2019 FEIS is available in FERC's ELibrary at accession number 20100102-3000.

3.1.1.1 Flow

Flow Into the Upstream Projects¹⁹

NID used in this filing the unimpaired flow into the Upstream Projects that was previously developed for a period of record of October 1, 1975, through September 30, 2008 (i.e., Water Years (WY) 1976 through WY 2008) in support of NID's P-2266 and PG&E's P-2310, P-14531 and P-14530 relicensings. This period includes wet years, dry years, critically dry years and an extended drought period (NID and PG&E 2007²⁰).

Operations of the Upstream Projects

With one exception described below, NID used the Yuba-Bear/Drum-Spaulding Water Balance and Operations Model (YB/DS Ops Model) as described in NID's June 7, 2021, filing.²¹ The YB/DS Ops Model is a single computer model that uses a period of record from WY 1976 through WY 2008 and generates average daily flows at various nodes, daily reservoir storage, and daily generation in each powerhouse for the Upstream Projects. The YB/DS Ops Model then models operations.

The one exception deals with accretion flows. The YB/DS Ops Model calculated accretion flow on the Middle Yuba River between NID's P-2266's Milton Diversion Dam and YCWA's P-2246's Our House Diversion Dam impoundment by gage-area proration of the South Yuba River at Cisco stream gage. On the South Yuba River, the model calculates accretion between Canyon Creek and Englebright Reservoir by gage-area proration of the Pilot Creek above Stumpy Meadows Reservoir stream gage (NID and PG&E 2007²²). After reviewing methods used by YCWA to develop accretions for these reaches for YCWA's Upstream Projects Operations Model (YCWA 2021²³), NID concluded that YCWA's accretion calculations are more representative of actual hydrologic conditions than those in the YB/DS Ops Model. Therefore, NID used in this filing YCWA's accretions along with simulated project releases from the YB/DS Ops Model to simulate inflows into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and flow at the South Yuba River at Jones Bar, which are inflow nodes to YCWA's Operations Model.

The YB/DS Ops Model used NID's and Placer County Water Agency's (PCWA) 2001-2009 average water supply demands developed during the relicensing of the Upstream Projects. NID and PG&E operate the Upstream Projects jointly under a coordinated operations agreement (COA). Data from the YB/DS Ops Model is post-processed in the Water Allocation Module that

¹⁹ "Upstream Projects" are collectively NID's P-2266 and PG&E's P-2310 and P-45131. PG&E's P-14530 facilities are not located in the Yuba River basin.

²⁰ Nevada Irrigation District (NID) and Pacific Gas and Electric Company (PG&E). 2007. Modeling and Evaluation Report, Synthesis of Unimpaired Hydrology, Preliminary Draft. NID's 2012 filing is available in FERC's ELibrary at accession number 20120817-5135.

²¹ *Ibid.*

²² *Ibid.*

²³ Yuba County Water Agency (YCWA). 2021. Technical Memorandum – Modeling Approach, Appendix 1, Technical Memorandum – Upstream Projects Operations Model. Filed on December 7, 2021. YCWA's 2021 filing is available in FERC's ELibrary at accession number 20211207-5175.

contains details of the COA, along with NID and PG&E water rights, to determine the allocation of water deliveries and delivery deficits. The Water Allocation Module has been updated since relicensing and the updated COA is provided in Appendix B of NID's June 7, 2021, filing²⁴ with FERC.

The YB/DS Ops Model prioritizes instream flow requirements over water supply deliveries and water supply deliveries over discretionary generation flow releases. The model does not include any reservoir minimum pool restrictions.

Operations of YCWA's P-2246 and P-1403

NID used YCWA's Operations Model configured for YCWA's Scenario 2, submitted as part of YCWA's December 7, 2021 filing,²⁵ representing existing conditions in YCWA's P-2246 and P-1403. Inflows into YCWA's Operations Model from the Middle Yuba River upstream of Our House Diversion Dam impoundment and in the South Yuba River upstream of Englebright Reservoir were calculated using simulated YB/DS Ops Model Upstream Project releases combined with YCWA's Upstream Projects Operations Model accretions, as described above. All other inflows to YCWA's Operation Model (e.g., from the North Yuba River, tributaries to the Middle Yuba River and Yuba River downstream of Our House Diversion Dam) were developed by YCWA as part of its P-2246 and P-1403 modeling. Model configuration for YCWA's Scenario 2 (Base Case) is described in YCWA's December 7, 2021, filing.²⁶

YCWA's Operations Model prioritizes operations of P-1403's Narrows 1 Powerhouse over P-2246's Narrows 2 Powerhouse and includes withdrawals by the Hallwood Irrigation Company, Cordua Irrigation District, Brophy Water District, Dry Creek Mutual Water Company, Ramirez Water District, South Yuba Water District, Wheatland Water District, and Browns Valley Irrigation District diversions in the Yuba River downstream Englebright Dam to calculate flow at the USGS Marysville streamflow gage, a compliance gage for YCWA's P-2246.

3.1.1.2 Water Temperature

Water Temperatures into P-2246's Our House Diversion Dam Impoundment and into USACE's Englebright Reservoir

NID used a regression analysis developed by YCWA updated by NID to estimate average daily water temperatures of water flowing into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and into Englebright Reservoir on the South Yuba River. The regression analysis is described in NID's June 7, 2021, filing.²⁷ In general, YCWA's regressions are seasonal water temperature models relating flow, equilibrium air temperature, coefficient of heat exchange, and short-wave radiation. Empirical water temperature data were collected continuously in the Middle Yuba River upstream of P-2266's Our House Diversion Dam

²⁴ *Ibid.*

²⁵ On December 7, 2021, YCWA filed with FERC responses to Items 1 and 4 in FERC's March 8, 2021, AIR letter to YCWA. YCWA's 2021 filing is available in FERC's ELibrary at accession number 20211207-5175.

²⁶ *Ibid.*

²⁷ *Ibid.*

impoundment and in the South Yuba River upstream of Englebright Reservoir since February 2009, which encompasses a wide range of conditions.

Water Temperatures in YCWA's P-2246

NID used YCWA's Downstream Area Temperature Model, as described in NID's December 7, 2021, filing,²⁸ to simulate water temperatures under the All Baseline scenario using output from YCWA's operations models.

Water Temperatures in Yuba River Downstream of YCWA's P-2246 and P-1403

NID used the Downstream Area Temperature Model, described in NID's December 7, 2021, FERC filing,²⁹ to simulate water temperatures at 0.1-mile intervals in the Yuba River downstream of Englebright Dam under the All Baseline scenario using output from YCWA's Water Balance and Operations Model. Output from the temperature model includes daily average water temperatures every tenth of a mile downstream of Englebright Dam.

YCWA calibrated its Downstream Area Temperature Model in 2013 to support YCWA's relicensing of P-1403.³⁰ Table 3-1 summarizes calibration results for locations in the lower Yuba River. The model period was WY 1970 through WY 2008 and the model calibration period was WY 2000 through WY 2011. Results of the calibration indicate that the model slightly overestimated water temperature on average for the months of July through October. YCWA reported in its December 2021 filing that it had recalibrated its water temperature model based on a broader range of historical conditions, including the 2013 through 2016 drought, but no new calibration statistics were provided. Assuming the results of the 2013 calibration are still generally the case, river miles of suitable habitat presented in this filing for all scenarios are likely underestimated (i.e. cooler temperature results in more miles of suitable habitat).

Table 3-1. Summary of mean error and absolute mean error for YCWA's Lower Temp Model at historical measurement locations from 2000 through 2011 (Reproduced from TM 2-6, YCWA 2013).

Location (River Mile)	Gage (Identification)	Full Calibration Period – WY 2000 through WY 2011		July through October – WY 2000 through WY 2011	
		Mean Error (°F)	Absolute Mean Error (°F)	Mean Error (°F)	Absolute Mean Error (°F)
Smartsville Gage (RM 23.9)	NY28	-0.95	1.35	0.14	0.81
Parks Bar (RM 17.7)	PB	-0.61	1.23	-0.03	1.25
Long Bar (RM 16.2)	LB	-0.68	1.32	0.26	1.14
Marysville Gage (RM 6.2)	11421000	-0.17	1.10	0.49	0.95

Source: Reproduced from Technical Memorandum 2-6 in YCWA 2013. Note that YCWA reported the period from July through October.

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ Yuba County Water Agency (YCWA). 2013. Technical Memorandum 2-6, Water Temperature Models. Yuba River Water Development Project, P-2246. October 2013.

3.1.2 Scenario 2, All FEIS (YB, UDS, LD & YRDP)

With one exception, NID used in this filing Scenario 2, LYR FEIS, in NID's December 7, 2021, filing³¹ for Upstream Project operations. The exception is that NID used YCWA accretions downstream of the Upstream Projects to simulate inflows into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and flows in the South Yuba River at Jones Bar, as described above under Scenario 1.

Scenario 2 represents operations of the Upstream Projects with FERC Staff recommendations and FPA Section 4(e) conditions as described in the FERC's December 19, 2014, FEIS for the Upstream Project (FERC 2014) and operations of YCWA's P-2246 with FERC Staff recommendations and FPA Section 4(e) conditions as described in the FERC and USACE's 2019 FEIS.³² All other conditions are the same as in Scenario 1, All Baseline.

Scenario 2 does not include P-2266's proposed generation upgrades (e.g., new Rollins Powerhouse) because it is premature for NID to plan any such generation facilities until flow requirements in the new license are more certain. This scenario does not include fish passage at any Yuba River facilities except Daguerre Point Dam where fish passage facilities are in place. In NID's P-2266, PG&E's P-2310 and YCWA's P-2246 relicensings, NMFS reserved its authority under Section 18, fishway prescriptions, of the FPA and, at this time, fish passage facilities at any Yuba River dams, excluding USACE's Daguerre Point Dam, have not undergone final design or been permitted or funded for construction and operation. In addition, in this scenario, YCWA's P-1403 is operated under the environmental baseline conditions. While YCWA has initiated P-1403 relicensing, FERC has not issued a FEIS or environmental assessment for P-1403.

NID simulated average daily water temperatures of water flowing into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and into Englebright Reservoir on the South Yuba River using the regression equations described above. NID used YCWA's Downstream Area Temperature Model to simulate water temperatures in P-2246 and in the Yuba River Downstream of P-2246 and P-1403, as described above.

NID understands that Scenario 2, All FEIS (YB, UDS, LD & YRDP) in this filing is identical to Scenario 2, All FEIS (YB, UDS, LD & YRDP) that PG&E included in its October 31, 2022, FERC AIR filing.

3.1.3 Scenario 3, YB Effect (YB Baseline and UDS, LD & YRDP FEIS)

NID's P-2266, PG&E's P-2310 and YCWA's P-2246 and P-1403 all contribute in various proportions, some of which are measurable, to the change in flows and temperatures in the Lower Yuba River under their respective FEIS operating conditions relative to Scenario 1, All Baseline. While individual contributions may not be additive, it is possible to estimate the relative impact of any one project to the other two. The purpose of Scenario 3 was to isolate the contribution of NID's P-2266's to the overall difference between Scenario 2 and Scenario 1. Scenario 3, NID

³¹ *Ibid.*

³² *Ibid.*

Baseline, PG&E & YWA FEIS, is the same as Scenario 2 described above except that NID's P-2266's operations assume existing conditions as in Scenario 1. The difference between Scenario 3 and Scenario 2 is the incremental impact of NID's P-2266 on flows and water temperatures relative to the total difference between Scenario 2 and Scenario 1.

Water temperatures in YCWA's P-2246 and in the lower Yuba River are simulated using the Downstream Area Temp Model, described in NID's December 7, 2021, filing. As described for Scenario 1, All Baseline, regression equations are used to estimate average daily water temperatures of water flowing into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and into Englebright Reservoir on the South Yuba River.

NID understands that PG&E's October 31, 2022, filing does not include this NID scenario, but included a similar scenario focused on PG&E's P-2310, P-14530 and P-14531.

3.1.4 Scenario 4, All Unimpaired (YB, UDS, LD & YRDP Unimpaired and Englebright, Daguerre Point and P-1403 Baseline)

With two exceptions, NID used Scenario 6, LYR Unimpaired, in NID's December 7, 2021, FERC filing.³³ The first exception is that NID's December 7, 2021, filing Scenario 6, LYR Unimpaired, used YCWA's P-2246 in place and operating under 2019 FERC and USACE FEIS conditions. In Scenario 4 in this filing, YCWA's P-2246 is not in place (i.e., no hydroelectric project facilities are in place except for P-1403). The second exception is, for consistency with Scenarios 1, 2 and 3 above, NID used YCWA accretions downstream of the Upstream Projects to simulate inflows into YCWA's P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and flows in the South Yuba River at Jones Bar.

In Scenario 4, Englebright Reservoir and Daguerre Point Dam impoundment were assumed to be operating as though they were the only reservoir on the Yuba River and YCWA's P-1403 was assumed to be operating because its operations predates relicensing of NID's P-2266, PG&E's P-2310 and YCWA's P-2246. In addition, in Scenario 4 diversions to the irrigation districts in the lower Yuba River pre-dating YCWA (i.e., Browns Valley Irrigation District, Hallwood Water Company and Cordua Irrigation District) were assumed to occur according to their water rights, but deliveries to other Yuba River irrigation districts were assumed not to occur.

Water temperatures in YCWA's P-2246 and in the lower Yuba River were simulated using YCWA's Downstream Area Temperature Model, described in NID's December 7, 2021, filing.³⁴ As described for the Scenario 1, regression equations were used to estimate average daily water temperatures of water flowing into P-2246's Our House Diversion Dam impoundment on the Middle Yuba River and into Englebright Reservoir on the South Yuba River.

NID included Scenario 4 because it is required by FERC in its 2021 AIR. However, this is a very unrealistic scenario. No party to the relicensing proceedings has proposed removal of all hydroelectric and water storage and delivery facilities in the Middle and South Yuba rivers and, if

³³ *Ibid.*

³⁴ *Ibid.*

this were to occur, most communities, including Grass Valley, Nevada City and the City of Auburn, and industry in the basin would cease.

NID understands that Scenario 4, All Unimpaired, in this filing is identical to Scenario 4, All Unimpaired, that PG&E included in its October 31, 2022, FERC AIR filing.

3.2 Target Period

FERC’s March 8, 2021, AIR letter³⁵ focuses on the months of July through November in dry and critically dry years or a combination of dry type years. During relicensing of P-2266, NID and agencies agreed on WY types and during relicensing for P-2246, agencies and YCWA agreed to apply the P-2266 WY types to P-2246 facilities upstream of Englebright Dam.³⁶ These WY types include Dry and Critically Dry WYs, where Dry WYs are defined by the California Department of Water Resources’ (DWR) May 1 forecast of total unimpaired runoff in the Yuba River at Smartsville is between 1,460,000 and 901,000 acre-feet, and Critically Dry WYs are defined as DWR’s May 1 forecast is 900,000 acre-feet or less. Based on these WY types, from WY 1976 through WY 2008, the period of record used throughout the P-2246, P-2310, P-14530 and P-14531 relicensings, 13 of the 33 WYs (i.e., 39%) are Dry or Critically Dry and four periods of consecutive dry WYs occur (Table 3-2).

Table 3-2. Dry and critically dry years and consecutive dry year periods in the Yuba River from Water Year 1976 through Water Year 2008.

Critically Dry WY	Dry WY	Consecutive Dry and Critically Dry WY Period
1976	1981	1976 & 1977
1977	1985	1987 & 1988
1987	1988	1990, 1991 & 1992
1994	1990	2007 & 2008
	1991	
	1992	
	2001	
	2007	
	2008 ²	
<i>Subtotal = 4 WYs</i>	<i>Subtotal = 9 WYs</i>	<i>Subtotal = 4 Periods (9 WYs)</i>
Total = 13 WYs		

¹ Shading indicates WYs that are not part of a consecutive Dry and Critically Dry WY period as shown in the third column of the table.

² Since NID’s models extend through WY 2008, which ends in September 2008, data for October through December 2008 are not available.

³⁵ *Ibid.*

³⁶ For PG&E’s P-2310 relicensing, PG&E and agencies agreed to and FERC adopted in its FEIS, the Dry WY type as defined P-2266. However, under P-2310, PG&E, agencies and FERC split the P-2266 Critically Dry WY type into two types: Critically Dry WY and Extremely Critically Dry WY. YCWA’s P-2246 uses the Yuba River Index, which includes storage in New Bullards Bar Reservoir as well as DWR’s Forecast or Unimpaired Runoff at Smartsville, for a schedule of WY types downstream of Englebright Dam.

NID focused its analysis in this attachment on these 13 WYs, as directed by FERC's March 2021 AIR letter.³⁷ NID understands that the Target Periods in this filing are identical to the Target Periods that PG&E used in its October 31, 2022, FERC AIR filing.

3.3 Target ESA-Listed Species and Geographic Scope of Analysis

Three ESA-listed fishes and their designated critical habitats occur in the lower Yuba River. These are:

1. Central Valley spring-run Chinook salmon Evolutionary Significant Unit (*Oncorhynchus tshawytscha*, or spring-run Chinook Salmon ESU) and its designated critical habitat in the Yuba River extends from the Feather River confluence upstream to Englebright Dam
2. California Central Valley steelhead Distinct Population Segment (*O. mykiss*, or CCV steelhead DPS) and its designated critical habitat in the Yuba River extends from the Feather River confluence upstream to Englebright Dam
3. North American green sturgeon Southern Distinct Population Segment (*Acipenser medirostris*, or NA green sturgeon Southern DPS) and its designated critical habitat in the Yuba River extends from the Feather River confluence upstream to Daguerre Point Dam

NID focused its analysis in this attachment on these three fishes, which are collectively referred to in this filing as ESA-listed fishes.

The geographic scope of this analysis was the Yuba River from Englebright Dam at RM 24.3 to the Yuba River confluence with the Feather River at RM 0.0.

NID understands that the ESA-listed fishes and geographic scope in this filing are identical to the ESA-listed fishes and geographic scope PG&E used in its October 31, 2022, FERC AIR filing.

3.4 Lifestage Periodicity of Target ESA-Listed Species in Target Period

NID relied on YCWA's June 2017 Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in its Amended FLA (YCWA 2017³⁸) for lifestage periodicities from July through November, the target period, as shown in Tables 3-3, 3-4 and 3-5, respectively.

³⁷ NID considered for this analysis extending the hydrologic period of record back to 1970 and forward to 2021. However, this would add only two additional Critically Dry WYs (i.e., 2014 and 2015) and no Dry WYs to the analysis and would require modifying the YB/DS Ops Model that has been used for over 10 years, was developed collaboratively with and agreed to by agencies and other relicensing stakeholders, and used by FERC in its FEIS. Since the existing period of record includes 13 WYs, NID determined that adding two additional WYs to the analysis did not warrant the cost of losing consistency with the overall relicensing approach and updating the YB/DS Ops Model.

³⁸ Yuba County Water Agency (YCWA). 2017. Amended Application for New License – Major Project Existing Dam – for Yuba River Development Project, FERC Project No. 2246. Filed on June 17, 2017. YCWA's 2017 amended application is available in FERC's ELibrary at accession number 20170617-5050.

Table 3-3. Lifestage-specific periodicities from July through November for CV spring-run Chinook salmon ESU in the lower Yuba River.

CV Spring-run Chinook Salmon ESU (Lifestage)	Jul		Aug		Sep		Oct		Nov	
Adult Immigration and Holding										
Spawning										
Embryo Incubation										
Fry Rearing										
Juvenile Rearing										
Juvenile Downstream Movement										
Smolt (Yearling+) Emigration										

Source: Lifestage periodicity is from Table 5.1-1 in YCWA's Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in YCWA's June 2017 Amended FLA.

Table 3-4. Lifestage-specific periodicities from July through November for CCV steelhead DPS in the lower Yuba River.

CV Steelhead DPS (Lifestage)	Jul		Aug		Sep		Oct		Nov	
Adult Immigration and Holding										
Spawning										
Embryo Incubation										
Fry Rearing										
Juvenile Rearing										
Juvenile Downstream Movement										
Smolt (Yearling+) Emigration										

Source: Lifestage periodicity is from Table 5.2-1 in YCWA's Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in YCWA's June 2017 Amended FLA.

Table 3-5. Lifestage-specific periodicities from July through November for NA green sturgeon Southern DPS in the lower Yuba River.

NA Green Sturgeon, Southern DPS (Lifestage)	Jul		Aug		Sep		Oct		Nov	
Adult Immigration and Holding										
Spawning and Embryo Incubation										
Post-Spawning Holding										
Juvenile Rearing and Outmigration										

Source: Lifestage periodicity and suitable water temperature ranges are from Table 6.7-3 in YCWA's Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in YCWA's June 2017 Amended FLA.

NID understands that the lifestage periodicities of the ESA-listed fishes in this filing are identical to the lifestage periodicities of the ESA-listed fishes PG&E used in its October 31, 2022, FERC AIR filing.

3.5 Water Temperature Suitability for Target ESA-Listed Species

While various opinions occur regarding water temperatures suitable to support various lifestages of Chinook salmon and steelhead, NID, after consultation with the California DFW and NMFS, used in this analysis the high end (i.e., warmer) of the range of water temperature objectives presented in the Lower Yuba River Accord (Yuba Accord), River Management Team's 2010

Lower Yuba River Water Temperature Objectives Technical Memorandum (RMT 2010³⁹). In an e-mail dated August 12, 2022, California DFW stated, “modeled operations/infrastructure alternatives and results presented in the AIR process are contextualized with RMT 2010 TM temperature objectives (e.g., added line(s) on modeled temperature exceedance graphs).” In a consultation meeting on August 22, 2022, California DFW clarified that it preferred the use of the water temperature objectives in RMT 2010 and NMFS stated that it was comfortable with use of the RMT 2010 water temperature objectives and, specifically, that average daily water temperatures rather than 7DADM water temperature would be adequate for NMFS’s use including in its ESA consultation with FERC. In an e-mail dated August 24, 2022, NMFS reiterated that “NMFS agrees and also recommends using the RMT 2010 water temperature objectives.” Note that for these reasons, NID did not include in this filing 7DADM water temperatures that were included in NID’s previous filings related to FERC’s March 8, 2021 AIR letter. The RMT’s (2010) range of water temperature objectives is shown in Table 3-6.

Table 3-6. RMT (2010) low and high water temperature objectives for spring-run Chinook salmon and steelhead.

Lifestage	Chinook Salmon		Steelhead	
	Low Water Temperature Objective	High Water Temperature Objective	Low Water Temperature Objective	High Water Temperature Objective
Adult Migration	60.0°F (15.6°C)	64.0°F (17.8°C)	56.0°F (13.3°C)	64.0°F (17.8°C)
Adult Holding	60.0°F (15.6°C)	64.0°F (17.8°C)	56.0°F (13.3°C)	64.0°F (17.8°C)
Spawning	56.0°F (13.3°C)		54.0°F (12.2°C)	57.0°F (13.9°C)
Embryo Incubation	56.0°F (13.3°C)		54.0°F (12.2°C)	57.0°F (13.9°C)
Fry/Juvenile Rearing & Downstream Movement	65.0°F (18.3°C)		65.0°F (18.3°C)	
Smolt (Yearling+) Emigration	63.0°F (17.2°C)		52.0°F (11.1°C)	55.0°F (12.8°C)

Source: RMT (2010) as summarized on August 12, 2022, e-mail from Beth Lawson of CDFW to NID, PG&E and YCWA.

For NA green Sturgeon Southern DPS, NID used for its analysis in this attachment the high end of the range of suitable water temperature objectives provided in YCWA’s June 2017 Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in its Amended FLA (YCWA 2017⁴⁰). The range of water temperature objectives is shown in Table 3-7.

Table 3-7. Suitable water temperatures for NA green sturgeon Southern DPS.

Lifestage	NA Green Sturgeon Southern DPS	
	Low End of Water Temperature Objectives	High End of Water Temperature Objectives
Adult Immigration & Migration	44.0°F (5.7°C)	61.0°F (16.1°C)
Spawning & Egg Incubation	46.0°F (7.8°C)	63.0°F (17.2°C)
Post-Spawning Holding	44.0°F (5.7°C)	61.0°F (16.1°C)
Juvenile Rearing & Outmigration	52.0°F (11.1°C)	61.0°F (16.1°C)

Source: From Table 6.7-3 in YCWA’s Applicant-Prepared Draft Biological Assessment for Central Valley Spring-Run Chinook Salmon, Central Valley Steelhead and North American Green Sturgeon in YCWA’s June 2017 Amended FLA.

³⁹ Yuba River Accord, River Management Team. 2010. Lower Yuba River Water Temperature Objectives Technical Memorandum. November 2010.

⁴⁰ *Ibid.*

NID's use of the RMT 2010 water temperature objectives for spring-run Chinook salmon and steelhead and the range of suitable water temperatures for NA green sturgeon Southern DPS, should not be inferred to mean that NID supports the RMT 2010 salmonid water temperature objectives or their use as absolute thresholds *per se* in the Yuba River or elsewhere but only that NID uses them in this filing to compare the suitability of the water temperature regimes associated with the various specific scenarios discussed in this attachment. NID fully acknowledges that compelling arguments may be made to use other water temperatures as suitable.

NID understands that the water temperatures assumed to be suitable to support various lifestages of the ESA-listed fishes in this filing are identical to the water temperatures PG&E used in its October 31, 2022, FERC AIR filing.

4 Results

4.1 Flows and Withdrawals from Englebright Reservoir during the Target Period

Tables 4-1, 4-2 and 4-3 present average monthly volumes of water that would enter Englebright Reservoir as released from P-2266, P-2310 and P-2246 and as uncontrolled flow for the months of July through November in Dry and Critically Dry WYs under Scenarios 1, 2 and 3, respectively. In addition, the tables show the average monthly volume of water withdrawn from Englebright Reservoir in those months. In Tables 4-1, 4-2 and 4-3:

- P-2266's releases on the Middle Yuba River are releases from Milton Diversion Dam.
- P-2266's releases on the South Yuba River are the sum of releases from Bowman-Spaulding Diversion Dam into Canyon Creek and from the Bowman-Spaulding Conduit into Texas, Clear, Trap and Rucker creeks, which drain into the South Yuba River.
- P-2246's releases are the sum of releases from Our House Diversion Dam into the Middle Yuba River, Log Cabin Diversion Dam into Oregon Creek, New Bullards Bar Dam into the North Yuba River and New Colgate Powerhouse into the Yuba River minus the release from Milton Diversion Dam.⁴¹
- P-2310's releases are the sum of releases from Fuller Lake Dam into Fuller Creek, which drain into the South Yuba River, and releases from Spaulding Dam directly into the South Yuba River.
- Uncontrolled flow from the Middle Yuba and Yuba rivers into Englebright Reservoir are the sum of accretion flows downstream of Our House Diversion Dam in the Middle Yuba River, Log Cabin Diversion Dam in Oregon Creek and New Bullards Bar Dam in the North Yuba River, and the Yuba River upstream of Englebright Dam.

⁴¹ The Yuba River begins at the confluence to the Middle Yuba River and North Yuba River upstream of Englebright Reservoir. Therefore, Middle Yuba River and Yuba River Flow inflows into Englebright Reservoir are combined in Table 4-1, 4-2 and 4-3.

- Uncontrolled flow from the South Yuba Rivers into Englebright Reservoir is the sum of accretions downstream of the Bowman-Spaulding Diversion Dam in Canyon Creek, and downstream of the Bowman-Spaulding Conduit into Fall, Texas, Clear, Trap Rucker, and Fuller creeks, and the South Yuba River downstream of Spaulding Dam to above Englebright Reservoir.
- Withdrawals from Englebright Reservoir into the lower Yuba River are the sum of the releases from P-1403's Narrows 1 Powerhouse and P-2246's Narrows 2 Powerhouses and Full Bypass. Englebright Dam does not spill from July through November in Dry and Critically Dry WYs.

Refer to Figure 1-1 for a map showing the location of the above referenced facilities.

Table 4-1. Average monthly inflows to and withdrawals from Englebright Reservoir for the months of July through November in Dry and Critically Dry WYs under Scenarios 1, All Baseline.

Dry and Critically Dry Water Years ¹	Middle Yuba River & Yuba River			South Yuba River			Total and Percent of Total, or Average
	P-2266	P-2246	Uncontrolled Flow	P-2266	P-2310	Uncontrolled Flow	
AVERAGE MONTHLY INFLOW INTO ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	0.3	83.2	0.6	0.3	0.4	2.3	87.1 (27.8%)
August	0.2	68.7	0.3	0.2	0.4	1.8	71.6 (22.9%)
September	0.2	42.8	0.3	0.2	0.4	1.7	45.6 (14.6%)
October	0.2	48.4	0.8	0.4	0.4	3.7	53.9 (17.2%)
November	0.2	46.4	2.0	0.3	0.4	5.5	54.8 (17.5%)
Total	1.1	289.5	4.0	1.4	2.0	15.0	313.0
AVERAGE MONTHLY WITHDRAWALS FROM ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	-- ²	86.4	--	--	--	--	86.4 (27.8%)
August	--	71.1	--	--	--	--	71.1 (22.8%)
September	--	45.3	--	--	--	--	45.3 (14.6%)
October	--	53.7	--	--	--	--	53.7 (17.2%)
November	--	54.7	--	--	--	--	54.7 (17.6%)
Total	--	311.2	--	--	--	--	311.2

Source: Scenario 1, All Baseline, shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² A double dash line indicates that information in the cell is not relevant (e.g., NID's P-2266 and PG&E's P-2310 do not release water into the lower Yuba River and Englebright Dam does not spill from July through November in Dry and Critically Dry WYs).

Under Scenario 1, All Baseline, YCWA's P-2246 is the largest contributor to flow into Englebright Reservoir from July through November in Dry and Critically Dry WYs, contributing 289.5 TAF, or 92.5 percent of the total Englebright Reservoir inflow of 313.0 TAF. The second largest contributor to flow into Englebright Reservoir during this period is Uncontrolled Flow, which includes 19.0 TAF (i.e., 4.0 TAF and 15.0 TAF from the Middle and South Yuba rivers, respectively), or 6.1 percent of the total Englebright Reservoir inflow. The remaining 1.4 percent of inflows during this period are split between NID's P-2266 (i.e., 1.1 TAF from the Middle Yuba River and 1.4 TAF from the South Yuba River, for a total of 2.5 TAF, or 0.8 percent of the total inflow into Englebright Reservoir) and PG&E's P-2310 (i.e., 2.0 TAF or 0.6 percent of the total inflow into Englebright Reservoir). Most of the water (i.e., 50.7%) enters the reservoir in July and August, with the remaining inflow relatively evenly distributed among the remaining three months. YCWA's P-2246 and P-1403 withdraw almost all of the water (i.e., 99.4%) that enters Englebright Reservoir from July through November in Dry and Critically Dry WYs, with most water (50.3%) withdrawn in July and August to meet downstream agricultural demands and the remainder

withdrawn relatively evenly from September through November (Table 4-1). The remaining 0.6 percent of water that flows into the reservoir during this period is lost to evaporation. In summary, under Scenario 1, the projects and uncontrolled flow relative contribution to Englebright Reservoir inflows are:

Relative Average Inflow to Englebright Reservoir – Scenario 1, All Baseline:

- **2.5 TAF (0.8%).** NID’s P-2266’s average inflow into Englebright Reservoir
- **2.0 TAF (0.6%).** PG&E’s P-2310’s average inflow into Englebright Reservoir
- **289.5 TAF (92.5%).** YCWA’s P-2246’s and P-1403’s NID’s average inflow into Englebright Reservoir
- **19.0 TAF (6.1%).** Uncontrolled flow

Table 4-2. Average monthly inflows to and withdrawals from Englebright Reservoir for the months of July through November in Dry and Critically Dry WYs under Scenarios 2, All FEIS.

Dry and Critically Dry Water Years ¹	Middle Yuba River & Yuba River			South Yuba River			Total and Percent of Total, or Average
	P-2266	P-2246	Uncontrolled Flow	P-2266	P-2310	Uncontrolled Flow	
AVERAGE MONTHLY INFLOW INTO ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	0.6	80.6	0.6	1.3	1.9	2.3	87.3 (27.2%)
August	0.5	67.5	0.3	1.3	1.5	1.8	72.9 (22.9%)
September	0.4	42.1	0.3	1.3	1.4	1.7	47.2 (14.9%)
October	0.6	46.6	0.8	1.4	1.7	3.7	54.8 (17.2%)
November	0.6	44.6	2.0	1.4	1.6	5.5	55.7 (17.5%)
Total	2.7	281.4	4.0	6.7	8.1	15.0	317.9
AVERAGE MONTHLY WITHDRAWALS FROM ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	-- ²	86.9	--	--	--	--	86.9 (27.4%)
August	--	72.7	--	--	--	--	72.7 (22.9%)
September	--	47.0	--	--	--	--	47.0 (14.8%)
October	--	54.5	--	--	--	--	54.5 (17.2%)
November	--	55.7	--	--	--	--	55.7 (17.6%)
Total	--	316.8	--	--	--	--	316.8

Source: Scenario 2, All FEIS, shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² A double dash line indicates that information in the cell is not relevant (e.g., NID’s P-2266 and PG&E’s P-2310 do not release water into the lower Yuba River and Englebright Dam does not spill from July through November in Dry and Critically Dry WYs).

Under Scenario 2, All FEIS, as compared to Scenario 1, YCWA retains more water in its New Bullards Bar Reservoir. YCWA’s P-2246’s contribution to flow into Englebright Reservoir from July through November in Dry and Critically Dry WYs decreases by 8.1 TAF to 281.4 TAF, which equals 88.5 percent of the total Englebright Reservoir inflow of 317.9 TAF. Uncontrolled Flow remains unchanged at 19.0 TAF, or 6.0 percent of the total Englebright Reservoir inflow. In contrast, while still a small proportion of the inflow into Englebright Reservoir, NID’s P-2266’s and PG&E’s P-2310’s contribution to inflow into Englebright Reservoir increase, as compared Scenario 1, by 6.9 TAF and 6.1 TAF, respectively, thereby offsetting YCWA’s releases from its New Bullards Bar Reservoir. Under Scenario 2, NID’s P-2266 contribution is 9.4 TAF (i.e., 2.7 TAF from the Middle Yuba River and 6.7 TAF from the South Yuba River) or 3.0 percent of the total inflow into Englebright Reservoir. PG&E’s P-2310 is 8.1 TAF, or 2.5 percent of the total inflow into Englebright Reservoir. As under Scenario 1, under Scenario 2 most of the water (i.e.,

50.4%) enters the reservoir in July and August with the remaining inflow relatively evenly distributed among the remaining three months, and YCWA's P-2246 and P-1403 withdraw almost all water (i.e., 99.7%) that enters Englebright Reservoir from July through November in Dry and Critically Dry WYs (Table 4-2). The remaining 0.3 percent of water that flows into the reservoir during this period is lost to evaporation. In summary, under Scenario 2, the projects and uncontrolled flow relative contribution to Englebright Reservoir inflows are:

Relative Average Inflow to Englebright Reservoir – Scenario 2, All FEIS:

- **9.4 TAF (3.0%).** NID's P-2266's average inflow into Englebright Reservoir
- **8.1 TAF (2.5%).** PG&E's P-2310's average inflow into Englebright Reservoir
- **281.4 TAF (88.5%).** YCWA's P-2246's and P-1403's NID's average inflow into Englebright Reservoir
- **19.0 TAF (6.0%).** Uncontrolled flow

Table 4-3. Average monthly inflows to and withdrawals from Englebright Reservoir for the months of July through November in Dry and Critically Dry WYs under Scenario 3, NID Baseline, PG&E & YCWA FEIS.

Dry and Critically Dry Water Years ¹	Middle Yuba River & Yuba River			South Yuba River			Total and Percent of Total, or Average
	P-2266	P-2246	Uncontrolled Flow	P-2266	P-2310	Uncontrolled Flow	
AVERAGE MONTHLY INFLOW INTO ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	0.3	82.0	0.6	0.3	2.0	2.3	87.5 (27.6%)
August	0.2	68.2	0.3	0.2	2.0	1.8	72.7 (22.9%)
September	0.2	43.1	0.3	0.2	1.6	1.7	47.1 (14.9%)
October	0.2	47.5	0.8	0.4	1.7	3.7	54.3 (17.1%)
November	0.2	45.8	2.0	0.3	1.6	5.5	55.4 (17.5%)
Total	1.1	286.6	4.0	1.4	8.9	15.0	317.0
AVERAGE MONTHLY WITHDRAWALS FROM ENGLEBRIGHT RESERVOIR (thousands of acre-feet)							
July	-- ²	86.8	--	--	--	--	86.8 (27.5%)
August	--	72.2	--	--	--	--	72.2 (22.9%)
September	--	46.9	--	--	--	--	46.9 (14.9%)
October	--	54.0	--	--	--	--	54.0 (17.1%)
November	--	55.4	--	--	--	--	55.4 (17.6%)
Total	0.0	315.3	0.0	0.0	0.0	0.0	315.3

Source: Scenario 3, NID Baseline, PG&E & YCWA FEIS, shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² A double dash line indicates that information in the cell is not relevant (e.g., NID's P-2266 and PG&E's P-2310 do not release water into the lower Yuba River and Englebright Dam does not spill from July through November in Dry and Critically Dry WYs).

Under Scenario 3, NID Baseline, PG&E & YCWA FEIS, as compared to Scenario 1, YCWA retains more water in its New Bullards Bar Reservoir. YCWA's P-2246's contribution to flow into Englebright Reservoir from July through November in Dry and Critically Dry WYs decreases by 2.9 TAF to 286.6 TAF, which equals 90.0 percent of the total Englebright Reservoir inflow of 317.0 TAF. Uncontrolled Flow and NID's P-2266's contributions to Englebright Reservoir remain unchanged at 19.0 TAF, or 6.0 percent of the total Englebright Reservoir inflow, and 2.4 TAF, or 0.8 percent of the total Englebright Reservoir inflow, respectively. As compared to Scenario 1, PG&E's P-2310's inflow increases from 2.0 TAF to 8.9 TAF, or 2.8 percent of the total

Englebright Reservoir inflow . In summary, under Scenario 3, the projects relative contribution to Englebright Reservoir inflows are:

Relative Average Inflow to Englebright Reservoir – Scenario 3, NID Baseline, PG&E & YCWA FEIS:

- **2.4 TAF (0.8%).** NID’ P-2266’s average inflow into Englebright Reservoir
- **8.9 TAF (2.8%).** PG&E’s P-2310’s average inflow into Englebright Reservoir
- **286.6 TAF (90.0%).** YCWA’s P-2246’s and P-1403’s NID’ average inflow into Englebright Reservoir
- **19.0 TAF (6.0%).** Uncontrolled flow

Table 4-4 presents average monthly volumes of unimpaired flow volumes that would enter Englebright Reservoir for the months of July through November in Dry and Critically Dry WYs under Scenarios 4. In addition, the tables show the average monthly volume of water that would be withdrawn from Englebright Reservoir through YCWA’s P-1403 Narrows 1 Powerhouse in those months. The unimpaired flow volumes are presented in Table 4-4 are comparable to geographic areas as shown in Tables 4-1, 4-2 and 4-3.

Table 4-4. Average monthly inflows to and withdrawals from Englebright Reservoir for the months of July through November in Dry and Critically Dry WYs under Scenarios 4, All Unimpaired.

Dry and Critically Dry Water Years ¹	Middle Yuba River & Yuba River		South Yuba River			Total and Percent of Total, or Average
	At Where Our House Diversion Dam Impoundment Would Occur	At Englebright Reservoir Minus Unimpaired Flow from Upstream at Where Our House Diversion Dam Would Occur	At Where Bowman Dam and Bowman-Spaulding Conduit Would Occur	At Where Bowman-Spaulding Conduit into Texas, Fall, Clear, Trap, Rucker, and Fuller Creeks and Lake Spaulding Would Occur	At Englebright Reservoir Minus Unimpaired Flow from Upstream of Bowman-Spaulding Conduit and Bowman, Carr Lake, Fuller Lake and Spaulding Dams	
AVERAGE MONTHLY INFLOW INTO ENGLEBRIGHT RESERVOIR (thousands of acre-feet)						
July	2.7	14.2	0.2	1.1	2.3	20.5 (18.0%)
August	1.8	10.2	0.1	0.6	1.8	14.5 (12.7%)
September	1.7	9.	0.2	0.7	1.7	13.4 (11.7%)
October	3.5	17.1	0.5	2.4	3.7	27.2 (23.8%)
November	4.9	22.9	1.0	4.3	5.5	38.6 (33.8%)
Total	14.6	73.5	2.0	9.1	15.0	114.2
AVERAGE MONTHLY WITHDRAWALS FROM ENGLEBRIGHT RESERVOIR THROUGH P-1403 NARROWS 1 POWERHOUSE (thousands of acre-feet)						
July	--					22.2 (19.4%)
August	--					16.1 (13.7%)
September	--					13.4 (11.5%)
October	--					26.0 (22.2%)
November	--					38.9 (33.2%)
Total	--					117.0

Source: Scenario 4, All Unimpaired, shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² A double dash line indicates that information in the cell is not relevant.

Under Scenario 4, All Unimpaired, as compared to Scenario 1, flow into Englebright Reservoir from July through November in Dry and Critically Dry WYs on the Middle Yuba River arm of the reservoir, which includes inflows from the North Yuba River, decreases by 61.2 percent from a total of 294.6 TAF to 114.2 TAF, with 14.6 TAF, or 5.0 percent, originating from upstream of the current location of P-2266's Milton Diversion Dam. In contrast, during this period flow into Englebright Reservoir on the South Yuba River arm of Englebright Reservoir increases by 41.8 percent from 18.4 TAF under the All Baseline scenario to 26.1 TAF with most of the increased flow (i.e., 7.1 TAF) originating from upstream of the current location of Spaulding Dam. In addition, in contrast to Scenario 1, under Scenario 4 most of the water (38.6%) enters Englebright Reservoir in November rather than in July and August. Under Scenario 4, YCWA's P-1403 withdraws more than all the water that enters Englebright Reservoir from July through November in Dry and Critically Dry WYs, with most water (34.1%) withdrawn in November. In summary, under Scenario 4 as compared to Scenario 1, the total inflow to Englebright Reservoir decreases from 313.0 TAF under the All Baseline Scenario to 114.2 TAF and the total withdrawal from Englebright Reservoir decreases from 311.2 TAF to 117.8 TAF (Table 4-4). As a summary:

Relative Average Inflow to Englebright Reservoir among Scenarios:

- **114.2 TAF.** Scenario 4, All Unimpaired
- **313.0 TAF.** Scenario 1, All Baseline
- **317.0 TAF.** Scenario 3, NID Baseline, PG&E & YCWA FEIS
- **317.9 TAF.** Scenario 2, All FEIS

NID understands that Tables 4-1, 4-2 and 4-4 in this filing are identical to Tables 4-1, 4-2 and 4-4 in PG&E's October 31, 2022, FERC AIR filing.

4.2 End-of-Season Irrigation Water Delivery Period Reservoir Storage

This section describes the changes in storage at the end of the seasonal water delivery period for YCWA's P-2246 and P-1403 and NID's P-2266 in Dry and Critically Dry WYs.

YCWA's P-2246 and P-1403 Storage at End of Water Delivery Period

YCWA's total gross storage is 1,011,400 acre-feet, which includes the gross storage in P-2246's New Bullards Bar Reservoir (966,400 acre-feet) and YCWA usable storage in Englebright Reservoir (45,000 acre-feet that can be used at either YCWA's P-2246 or YCWA's P-1403, per Water Right License 6388). Table 4-5 shows New Bullards Bar Reservoir gross storage plus Englebright Reservoir usable storage at the end of YCWA's irrigation season on September 30 in Dry and Critically Dry WYs under Scenarios 1 and 2 and the difference in storage between the two scenarios. In these years, YCWA would experience water delivery shortages in only one year – 1977 - and the shortages would be similar under both scenarios (i.e., ~152,000 acre-feet or 50% of demand during the irrigation season). As a result of the higher upstream minimum flows under NID's P-2266, PG&E's 2310 and that YCWA can store additional water in these years because it releases less water to meet minimum flow requirements in the lower Yuba River to offset the

increases inflow to Englebright Reservoir from the Middle and South Yuba rivers, under Scenario 2, New Bullards Bar Reservoir would increase by an average of 25,764 acre-feet, or 4.5 percent, from an average of 567,343 acre-feet to an average of 593,107 acre-feet (Table 4-5). Reservoir storage is not constrained by flood control pool storage limitations in any of years listed in Table 4-5 under Scenario 1, All Baseline, or Scenario 2, All FEIS.

Table 4-5. New Bullards Bar Reservoir gross storage and Englebright Reservoir usable storage (per YCWA's Water Rights) at the end of YCWA's seasonal water delivery period on September 30 in Dry and Critically Dry WYs under Scenario 1, All Baseline, and Scenario 2, All FEIS.

Dry and Critically Dry Water Years ¹	Storage at End of YCWA's Seasonal Water Delivery Period on September 30 (acre-feet)		Difference in Storage (acre-feet)
	Scenario 1, All Baseline	Scenario 2, All FEIS	
1976	549,528	580,987	31,459
1977	346,655*	370,704*	24,049
1981	610,716	630,539	19,823
1985	668,589	674,222	5,633
1987	497,468	535,981	38,513
1988	450,994	509,783	58,789
1990	690,636	692,068	1,432
1991	689,865	691,274	1,409
1992	533,261	554,988	21,727
1994	552,431	582,080	29,649
2001	546,803	596,621	49,818
2007	599,244	619,840	20,596
2008	639,266	671,298	32,032
Average	567,343	593,107	25,764

Source: Scenarios 1 and 2 shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

* WY in which a water delivery shortage would occur.

NID understands that Table 4-5 in this filing is identical to Table 4-5 in PG&E's October 31, 2022, FERC AIR filing.

NID's P-2266 Storage at End of Water Delivery Period

In comparison, to YCWA's 1,011,400 acre-feet of storage, NID's P-2266 gross storage in the Yuba River basin is 158,078 acre-feet, or 15.5 percent of P-2246's storage capacity. NID P-2266's storage includes Jackson Meadows Reservoir (67,435 acre-feet) in the Middle Yuba River basin and Jackson Lake (1,330), French Lake (13,940), Faucherie Lake (3,980) Sawmill Lake (3,030) and Bowman Reservoir (68,363) in the South Yuba basin. Table 4-6 shows P-2266's cumulative storage at the end of NID's irrigation season on October 14 in Dry and Critically Dry WYs under Scenarios 1 and 2 and the difference in storage between the two scenarios. In comparison to YCWA's P-2246, which would gain on average 25,764 acre-feet of storage under Scenario 2 (Table 4-5), NID's P-2266 would lose on average 8,860 acre-feet, or 14.5 percent, of its storage (Table 4-6). In addition, as compared to YCWA, NID would experience increased water shortages. Under Scenario 1, NID would experience water delivery shortages of 42,000 acre-feet (i.e., a shortage of 30% of demand) in 1977, a Critically Dry WY, and 11,000 acre-feet (i.e., a shortage of 8% of demand) in 1978, a Below Normal WY. Under Scenario 2, NID's 1977 and 1978 shortages increase to 65,000 acre-feet (i.e., a shortage of 46% of demand) and 14,000 acre-feet

(i.e., a shortage of 10% of demand), respectively, and an additional water shortage of 3,000 acre-feet would occur in 1976. In 1977, usable storage is exhausted in NID's reservoirs under both Scenario 1 and Scenario 2.

Table 4-6. P-2266's combined gross reservoir storage at the end of NID's seasonal water delivery period on October 14 in Dry and Critically Dry WY under Scenario 1, All Baseline, and Scenario 2, All FEIS.

Dry and Critically Dry Water Years ¹	Storage ² at End of NID's Seasonal Water Delivery Period on October 14 (acre-feet)		Difference in Storage (acre-feet)
	Scenario 1, All Baseline	Scenario 2, All FEIS	
1976	52,622	47,641*	-4,981
1977	15,639*	15,639*	0 ⁴
1981	71,989	61,268	-10,721
1985	86,611	82,801	-3,810
1987	52,466	36,890	-15,576
1988	30,288	19,731	-10,557
1990	82,159	80,121	-2,038
1991	77,769	73,242	-4,526
1992	55,639	41,875	-13,764
1994	63,219	52,093	-11,126
2001	65,435	50,530	-14,905
2007	80,175	65,864	-14,311
2008 ³	--	--	--
Average	61,168	52,308	-8,860

Source: Scenarios 1 and 2 shown in Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² Reservoirs used to calculate gross storage include Jackson Meadows Reservoir, Jackson Lake, French Lake, Faucherie Lake, Sawmill Lake, and Bowman Lake.

³ WY 2008 is not included in this analysis because the YB/DS Ops Model ends on WY 2008, which is the end of September 2008. In comparison, WY 2008 is shown in Table 4-5 because October 2008 is included in YCWA's Ops Model.

⁴ No usable storage would occur under either Scenario 1 of Scenario 2.

* WY in which a water delivery shortage would occur.

In summary, the projects relative end of irrigation storage under Scenario 2 and change in storage from Scenario 1 are:

Relative Average End of Irrigation Season Storage and Change Under Scenario 2, All FEIS, and Change from Scenario 1, All Baseline:

- **52,308 acre-feet.** NID's P-2266's end of season storage under Scenario 2
- **593,107 acre-feet.** YCWA's P-2246/P-1403's end of season storage under Scenario 2
- **Loss of 8,860 acre-feet.** NID's P-2266's change in storage from Scenario 1 to Scenario 2
- **Gain of 25,764 acre-feet.** YCWA's P-2246/1403's change in storage from Scenario 1 to Scenario 2

4.3 Suitable Water Temperatures in the Lower Yuba River during the Target Period – CV Spring Run Chinook Salmon ESU

Table 4-7 lists the six water temperature analyses NID made for Scenarios 1 through 4 to assess the average number of Yuba River miles from the Smartsville gage downstream that would provide suitable water temperatures for the various lifestages of CV spring-run Chinook salmon ESU.

Table 4-7. List of analyses for Scenarios 1 through 4 to quantify the average number of Yuba River miles from the Smartsville gage downstream that would provide suitable water temperatures for the various lifestages of CV spring-run Chinook salmon ESU.

Model Run	Lifestage	Period and RMT 2010 Cooler End High Water Temperature Objective					
		July	August	September	October	November	
1	Adult Immigration & Holding	64.0°F					
2	Spawning			56.0°F			
3	Embryo Incubation			56.0°F			
4	Fry Rearing & Juvenile Downstream Movement ¹						65.0°F
5	Juvenile Rearing	65.0°F					
6	Smolt (Yearling+) Emigration					63.0°F	

Source: Refer to Tables 3-2 and 3-5 for the periodicity and suitable water temperatures, respectively, for each CV spring-run Chinook salmon ESU lifestage.

¹ NID combined the Fry Rearing and Juvenile Downstream Movement lifestages into one model run since the two lifestages have the same periodicity in the Target Period (i.e., last 2 weeks in November) and the same suitable water temperature (i.e., 65.0°F or less).

Provided below for each CV Spring Run Chinook Salmon ESU lifestage are:

- A bar graph figure that displays by month the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperature during the target period for that lifestage for Scenarios 1 through 4. The monthly average was calculated by summing the number of river miles each day for that part of the month for the lifestage in the target period and dividing the sum by the total number of days. Only months in which the lifestage would use the lower Yuba River, as shown in Table 4-7, are shown. In some cases, a bar for Scenario 4, All Unimpaired, is not shown because the scenario provides no river miles of suitable water temperature.
- A table showing the incremental effects of P-2266.

As stated above, river miles of suitable water temperature presented below for all scenarios are likely underestimated because YCWA's water temperature model indicated that temperatures are slightly overestimated on average for the months of July through October. YCWA's calibration period did not include November. Cooler water temperatures would result in more miles of suitable habitat. Further, very small differences (e.g., 0.1 or 0.3) in predicted numbers of river miles of suitable water temperature between scenarios should be treated with some skepticism since, when dealing with over 24 river miles, small differences may be within a reasonably assumed approach/modeling error.

Effect on the number of river miles with suitable water temperature should not be assumed to be an equal effect on ESA-listed fishes. NID used its analysis the definition of “not likely to adversely affect” as described on page 1 of NMFS’s letter to FERC dated October 16, 2020.⁴² That is:

The applicable standard to find that a proposed action is “not likely to adversely affect” listed species or critical habitat is that *all* of the effects of the proposed action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur

NMFS’s October 16, 2020, letter⁴³ implied that the proposed action is the single action of the Commission relicensing *all* of the five projects – NID’s P-2266, PG&E’s P-2310, P-14530 and P-14531 and YCWA’s P-2246. For the purpose of NID’s analysis, the proposed action is the Commission issuing a new license for P-2266 consistent with the terms and conditions in FERC’s 2014 FEIS with mandatory conditions.⁴⁴ NID notes that the Commission could issue a new license to any one or combination of any of the five projects. Assuming that a finding that any one of the five projects “may affect” an ESA-listed fish means a finding that all five of the projects “may affect” that ESA-listed fish is nonsensical. For instance, a finding that YCWA’s P-2246 “may affect” ESA-listed fishes in the lower Yuba River due to stranding does not mean that NID’s P-2266 operations cause stranding of ESA-listed fishes. Similarly, a finding that PG&E’s P-14530 “may affect” ESA-listed fishes in Western Placer County Streams does not mean that NID’s P-2266 affects that fish since P-2266 includes no diversions, releases or facilities in Western Placer County Streams.

Further, NID’s analysis focuses on water temperature, as directed by FERC in its March 2021 AIR letter.

Refer to Appendix B for a HEC-DSS view of the data used to compile the figures. Monthly exceedance plots of river miles of suitable water temperature are provided in Appendix C. Appendix D includes detailed tables providing the average number of river miles of suitable water temperatures by month.

⁴² United States Department of the Interior, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). 2020. Letter from Steve Edmondson, NMFS FERC Hydropower Branch Supervisor, to Kimberly D. Bose, FERC Secretary, Re: Insufficient information to initiate formal consultation under Endangered Species Act Section 7(a)(2) and Essential Fish Habitat consultation under the Magnuson-Stevens Fishery Conservation and Management Act for the Yuba River Development (P-2246), Upper Drum-Spaulding (P-2310), Lower Drum (P-14531), Yuba-Bear (P-2266), and Deer Creek (P-14530) Hydroelectric Projects. Letter dated October 16, 2020. Available in FERC’s ELibrary at accession number 20201016-5119.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

4.3.1 Scenario 1 Compared to Scenario 4

Figures 4-1 through 4-6 show that, for all CV spring-run Chinook salmon ESU lifestages, from July through November in Dry and Critically Dry WYs the monthly average number of river miles of suitable water temperature under Scenario 1 (i.e., current operations of NID's P-2266, PG&E's P-2310 and YCWA's P-2246 collectively) is never less than and usually significantly more than the monthly average number of river miles of suitable water temperature under Scenario 4 (i.e., All Unimpaired). Therefore, Scenario 1 as compared to Scenario 4 is not likely to adversely affect CV spring-run Chinook salmon ESU during this period because Scenario 1 has a positive effect on the species and its critical habitat when compared to Scenario 4.

4.3.2 Scenario 2 Compared to Scenario 4

Similarly, Figures 4-1 through 4-6 show that, for all CV spring-run Chinook salmon ESU lifestages, from July through November in Dry and Critically Dry WYs the monthly average number of river miles of suitable water temperature under Scenario 2, All FEIS, would never be less than and would usually be significantly more than the monthly average number of river miles of suitable water temperature under Scenario 4, All Unimpaired. Therefore, Scenario 2 as compared to Scenario 4 is not likely to adversely affect CV spring-run Chinook salmon ESU during this period because Scenario 2 has a positive effect on the species and its critical habitat when compared to Scenario 4.

4.3.3 Scenario 3 Compared to Scenario 2

A review of Figures 4-1 through 4-6 show that, in most months, Scenario 2, All FEIS, would result in a small reduction in the monthly average of river miles of suitable water temperature for all CV spring-run Chinook salmon ESU lifestages as compared to Scenario 1, All Baseline. The analysis below by lifestage focuses on NID's P-2266's component part of that small reduction, as determined in Scenario 3.

4.3.3.1 Adult Immigration & Holding

Figure 4-1 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Adult Immigration and Holding. Table 4-8 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Adult Immigration and Holding.

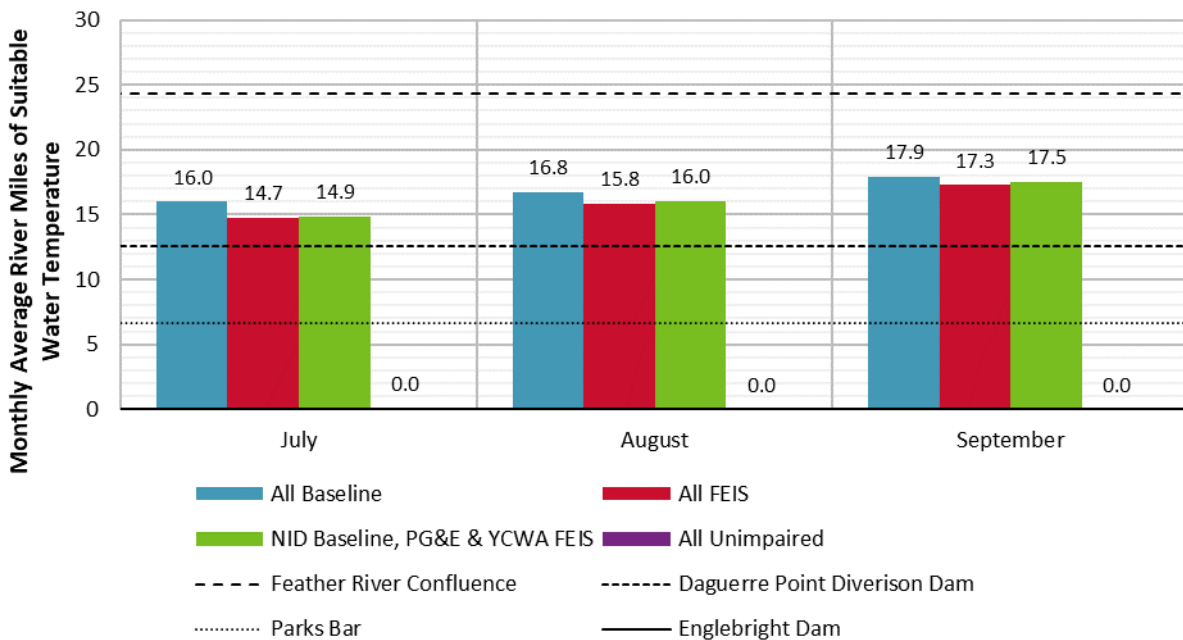


Figure 4-1. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 64.0°F or less) from July through September in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU – Adult Immigration and Holding.

Table 4-8. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID’s P-2266 - CV spring-run Chinook salmon ESU - Adult Immigration & Holding.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2266
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Adult Immigration & Holding	Jul	0.0	16.0	-1.3	-0.2
	Aug	0.0	16.8	-0.8	-0.2
	Sep	0.0	17.9	-0.6	-0.2
	Oct	-- ²	--	--	--
	Nov	--	--	--	--

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-2.

Scenario 3 shows that NID’s P-2266, as described in FERC’s 2014 FEIS, would reduce monthly average available suitable habitat for CV spring-run Chinook salmon ESU Adult Immigration and Holding by only 0.2 mile, or about 1,000 feet or 1 percent of available 14.7 to 17.3 river miles of habitat under Scenario 2. This very small reduction in habitat attributable to NID’s P-2266 is not likely to adversely affect Adult Immigration and Holding for three reasons. First, this very small

reduction in habitat would occur well downstream of the habitat typically used by this lifestage. According to the Yuba River Accord, River Management Team, or RMT, adult spring-run Chinook salmon immigrating into the Yuba River tend to hold primarily in pools near Daguerre Point Dam and then rapidly move upstream (RMT 2013⁴⁵). Under Scenarios 1 and 2, suitable water temperatures extend downstream at least 14.7 miles - two miles downstream of Daguerre Point Dam. Therefore, the primary habitat used by this lifestage would be unaffected. Second, the reduction in habitat is insignificant – about a 1,000 feet out of 14.7 to 17.3 river miles of habitat with suitable water temperature. Third, a reduction of about 1,000 feet in habitat in this less than prime habitat at the downstream end of habitat is discountable. This small amount of reduced habitat is likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Adult Immigration and Holding since individual fishes could certainly swim upstream 1,000 feet to habitat with more suitable water temperature.

In summary, operations of P-2266 in combination P-2310 and P-2246 under Scenarios 1 and 2 have a significant positive effect on habitat for CV spring-run Chinook salmon ESU Adult Immigration and Holding from July through November in Dry and Critically Dry WYs as compared to Scenario 4. While some reduction in river miles of suitable water temperature would occur under Scenario 2 as compared to Scenario 1, the portion of the reduction attributable to NID's P-2266's would be extremely small and not likely to result in take if the effect occurred at all. FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy.

4.3.3.2 Spawning

Figure 4-2 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Spawning. Table 4-8 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Spawning.

⁴⁵ 2013. Lower Yuba River Accord, River Management Team (RMT). 2013. Interim Monitoring & Evaluation Report. April 2013. Available online: <https://www.yubawater.org/DocumentCenter/View/1870/ME-Interim-Report-Draft-April-2013-PDF>.

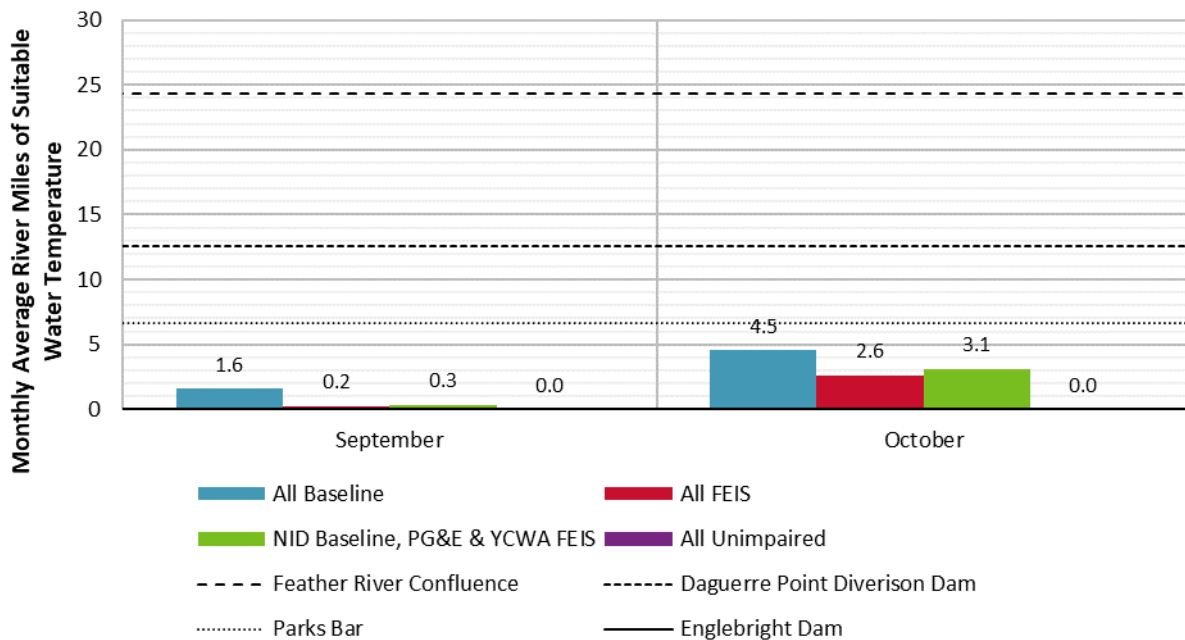


Figure 4-2. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 56.0°F or less) from September through October in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU – Spawning.

Table 4-9. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CV spring-run Chinook salmon ESU - Spawning.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2266
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Spawning	Jul	-- ²	--	--	--
	Aug	--	--	--	--
	Sep	0.0	1.6	-1.4	-0.1
	Oct	0.0	4.5	-1.9	-0.5
	Nov	--	--	--	--

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month, except for October that includes the first 2 weeks in the month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Table 3-3.

According to the RMT, after holding downstream, adult spring-run Chinook salmon rapidly move upstream and then hold at one specific location, possibly indicating spawning, followed by rapid downstream movement. The earliest spawning of spring-run Chinook salmon generally occurs in the upper reach of the Lower Yuba River and progressively moves downstream, with most

spawning upstream of Daguerre Point Dam. The RMT states that, with the exception of the Englebright Dam Reach, suitable spawning gravel is abundant in the Lower Yuba River. (RMT 2013.⁴⁶)

Since the effects, which are extremely unlikely to occur, would be extremely small and not likely to result in take if the effects occurred at all, FERC's issuance of a new P-2266 license to NID is not likely to result in jeopardy. In addition, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with the project's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 (i.e., Scenario 1, All Baseline) have a positive effect to CV spring-run Chinook salmon ESU Spawning.

4.3.3.3 Embryo Incubation

Figure 4-3 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Embryo Incubation and Table 4-10 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Embryo Incubation.

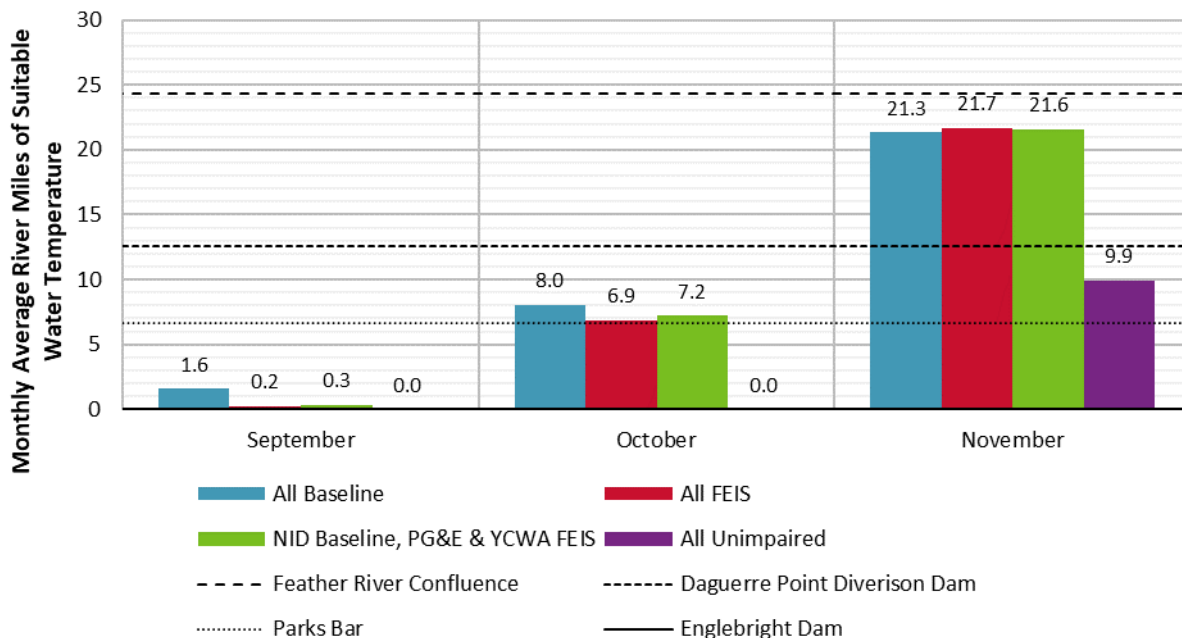


Figure 4-3. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 56.0°F or less) from September through November in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU – Embryo Incubation.

⁴⁶ *Ibid.*

Table 4-10. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CV spring-run Chinook salmon ESU - Embryo Incubation.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Embryo Incubation	Jul	-- ²	--	--	--
	Aug	--	--	--	--
	Sep	0.0	1.6	-1.4	-0.1
	Oct	0.0	8.0	-1.1	-0.3
	Nov	9.9	21.3	+0.4	+0.1

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Table 3-3.

As described above, spring-run Chinook salmon spawning and egg incubation generally occurs in the upper reach of the Lower Yuba River and progressively moves downstream, with most activity upstream of Daguerre Point Dam (RMT 2013.⁴⁷)

As compared to Scenario 1, All Baseline, NID's P-2266, as described in FERC's 2014 FEIS, would reduce available suitable habitat for CV spring-run Chinook salmon ESU Embryo Incubation by between 0.1 mile in September and 0.3 mile in October and increase suitable habitat by 0.1 mile in November.

Since the effects would be small and not likely to result in take if the effects occurred, FERC's issuance of a new P-2266 license to NID is not likely result in an adverse effect to CV spring-run Chinook salmon ESU Embryo Incubation. In addition, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with the project's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 have a positive effect to CV spring-run Chinook salmon ESU Embryo Incubation.

4.3.3.4 Fry Rearing and Juvenile Downstream Movement

Figure 4-4 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Fry Rearing and Juvenile Downstream Movement. Table 4-11 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Fry Rearing and Juvenile Downstream Movement.

⁴⁷ *Ibid.*

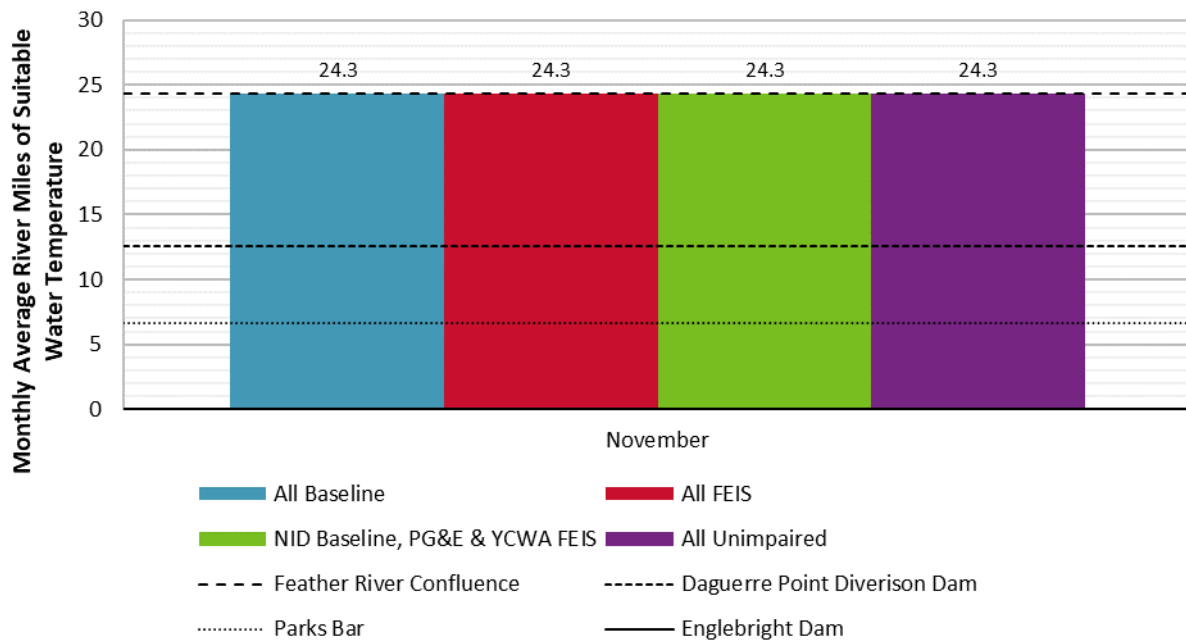


Figure 4-4. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 65.0°F or less) in November in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU – Fry Rearing and Juvenile Downstream Movement.

Table 4-11. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CV spring-run Chinook salmon ESU - Fry Rearing and Juvenile Downstream Movement.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Fry Rearing & Juvenile Downstream Movement	Jul	-- ²	--	--	--
	Aug	--	--	--	--
	Sep	--	--	--	--
	Oct	--	--	--	--
	Nov	24.3	24.3	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles for Fry Rearing and Juvenile Downstream Movement in November is calculated by averaging the change in number of river miles for each day of periodicity in the last 2 weeks of November.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-2.

As shown in Figure 4-4 and Table 4-11, suitable water temperature for CV spring-run Chinook salmon ESU Fry Rearing and Juvenile Downstream Movement would occur in the entire lower Yuba River under Scenarios 1 through 4. FERC's issuance of a new P-2266 license to NID would have no effect to CV spring-run Chinook salmon ESU Fry Rearing and Juvenile Downstream Movement.

4.3.3.5 Juvenile Rearing

Figure 4-5 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Juvenile Rearing. Table 4-12 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Fry Rearing and Juvenile Rearing.

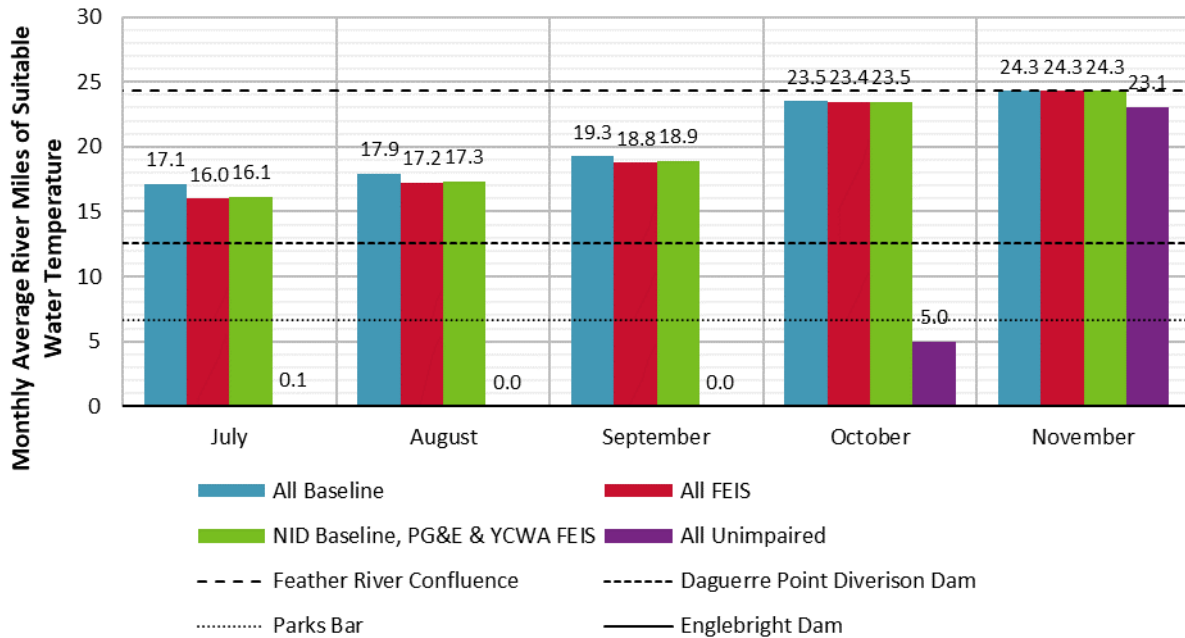


Figure 4-5. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 65.0°F or less) from July through November in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU and CCV steelhead DPS – Juvenile Rearing.

Table 4-12. Incremental change in average monthly number of river miles of suitable water temperature by life stage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CV spring-run Chinook salmon ESU – Juvenile Rearing.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Juvenile Rearing	Jul	0.1	17.1	-1.1	-0.1
	Aug	0.0	17.9	-0.7	-0.1
	Sep	0.0	19.3	-0.5	-0.1
	Oct	5.0	23.5	-0.1	0.0
	Nov	23.1	24.3	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

The RMT's snorkeling observations in 2012 indicate that the density of juvenile Chinook salmon is highly variable throughout the Lower Yuba River although, with the exception Englebright Dam Reach, the upstream-most survey reach, the density of juvenile Chinook salmon generally was higher in the survey reaches located upstream rather than downstream of Daguerre Point Dam (RMT 2013⁴⁸). RMT data collection in 2012 and 2014 were consistent with these findings (RMT, unpublished data). The RMT (2013⁴⁹) reported that juvenile Chinook salmon appeared to occupy areas in close proximity to the shore during most survey months and in most survey reaches.

As compared to Scenario 1, All Baseline, NID's P-2266, as described in FERC's 2014 FEIS, would reduce available suitable habitat for CV spring-run Chinook salmon ESU Juvenile Rearing by up to 0.1 mile, or about 500 feet of available habitat under Scenario 1 in July through September and have zero change in October and November. This very small reduction in habitat is not likely to adversely affect Juvenile Rearing. First, this very small reduction in habitat would occur well downstream of the habitat typically used by this lifestage. Under Scenarios 1 and 2, suitable water temperatures extend downstream at least 16.0 miles - four miles downstream of Daguerre Point Dam, which is 12.7 miles downstream of Englebright Dam. Therefore, the primary habitat used by this lifestage would be unaffected. Second, the reduction in habitat is insignificant – about 1,000 feet with about 80,000 feet of river still available.

Since the effects, which are unlikely to occur, would be extremely small and not likely to result in take if the effects occurred at all, FERC's issuance of a new P-2266 license to NID is not likely to result in jeopardy. In addition, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with the project's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 have a positive effect to CV spring-run Chinook salmon ESU Juvenile Rearing.

4.3.3.6 Smolt (Yearling+) Emigration

Figure 4-6 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CV spring-run Chinook salmon ESU Smolt (Yearling+) Emigration and Table 4-13 shows the incremental change by month in the number of river miles of suitable water temperature by project for CV spring-run Chinook salmon ESU Smolt (Yearling+) Emigration.

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

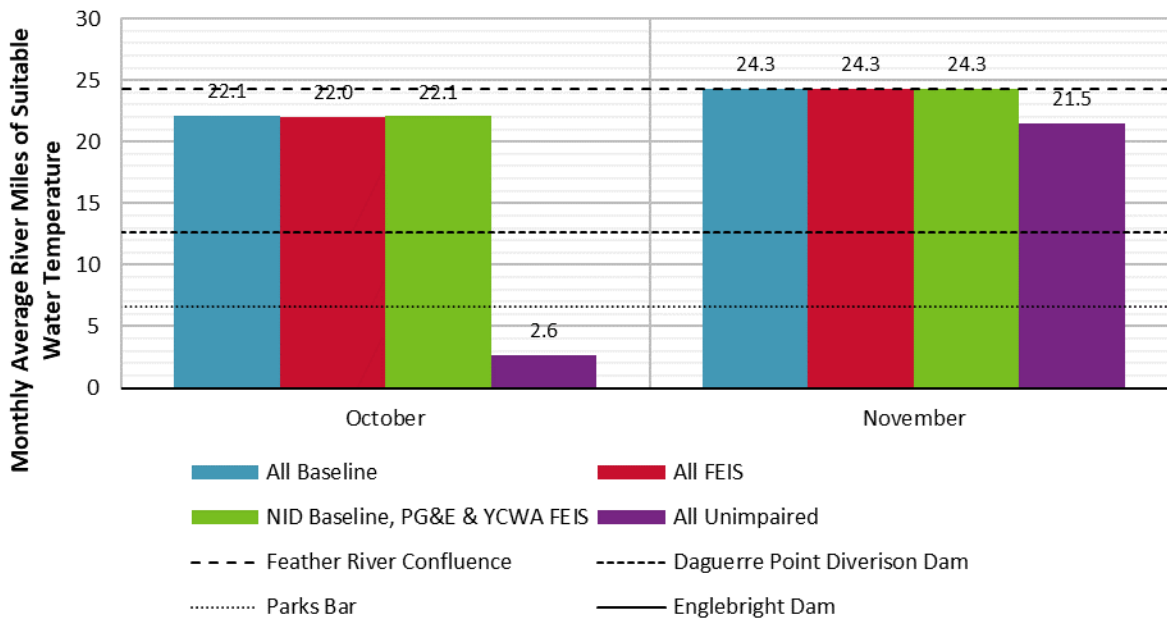


Figure 4-6. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 63.0°F or less) from October through November in Dry and Critically Dry Water Years during the applicable period for CV spring-run Chinook salmon ESU – Smolt (Yearling+) Emigration.

Table 4-13. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CV spring-run Chinook salmon ESU - Smolt (Yearling+) Emigration.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Smolt (Yearling+) Emigration	Jul	-- ²	--	--	--
	Aug	--	--	--	--
	Sep	--	--	--	--
	Oct	2.6	22.1	-0.1	+0.1
	Nov	21.5	24.3	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-2.

Scenario 2, All FEIS, would result in a 0.1 reduction in the monthly average of river miles of suitable water temperature in October and no change in November, as compared to Scenario 1, All Baseline. However, NID's P-2266 would have no effect (Table 4-13). Therefore, FERC's issuance to NID of a new license for P-2266 consistent with the conditions in FERC's 2014 FEIS is not likely to adversely affect CV spring-run Chinook salmon ESU Smolt (Yearling+) Emigration.

4.4 Suitable Water Temperatures in the Lower Yuba River during the Target Period – CCV Steelhead DPS

Table 4-14 lists the four model runs NID made for Scenarios 1 through 4 to assess the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures for the various lifestages of CV steelhead DPS.

Table 4-14. List of figures showing for Scenarios 1 through 4 the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures for the various lifestages of CV steelhead DPS.

Model Run	Lifestage	Period and RMT 2010 High Water Temperature Objective							
		July	August	September	October	November			
7	Adult Immigration & Holding			64.0°F					
8	Fry Rearing	65.0°F							
9	Juvenile Rearing	65.0°F							
10	Juvenile Downstream Movement	65.0°F							
11	Smolt (Yearling+) Emigration					55.0°F			

Source: Refer to Tables 3-3 and 3-5 for the periodicity and suitable water temperatures, respectively, for each CCV steelhead DPS lifestage.

Provided below for each CCV steelhead DPS lifestage are:

- A bar graph figure that displays by month the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperature during the target period for that lifestage for Scenarios 1, 2, 3 and 4. The monthly average was calculated by summing the number of river miles each day for that part of the month for the lifestage in the target period and dividing the sum by the total number of days. Only months in which the lifestage would use the lower Yuba River, as shown in Table 4-14, are shown. In some cases, a bar for Scenario 4, All Unimpaired, is not shown because the scenario provides no miles of suitable water temperature.
- A table showing the incremental effects of P-2266.

Refer to Appendix B for a HEC-DSS view of the data used to compile the figures. Monthly exceedance plots of river miles of suitable water temperature are provided in Appendix C. Appendix D includes detailed tables providing the average number of river miles of suitable water temperatures by month under Scenario 1, All Baseline, and Scenario 2, All FEIS.

As stated above, river miles of suitable habitat presented below for all scenarios are likely underestimated and very small differences (e.g., 0.1 or 0.2) in predicted numbers of river miles of suitable water temperature between scenarios should be treated with some skepticism since, when dealing with over 24 river miles, small differences may be within a reasonably assumed approach/modeling error.

An effect on the number of river miles with suitable water temperature should not be assumed to be an equal effect on ESA-listed fishes.

4.4.1 Scenario 1 Compared to Scenario 4

Figures 4-7 through 4-11 show that, for all CCV steelhead DPS lifestages, from July through November in Dry and Critically Dry WYs the monthly average number of river miles of suitable water temperature under Scenario 1 (i.e., current operations of NID's P-2266, PG&E's P-2310 and YCWA's P-2246 collectively) is never less than and usually significantly more than the monthly average of number of river miles of suitable water temperature under Scenario 4 (i.e., All Unimpaired). Therefore, Scenario 1 as compared to Scenario 4 is not likely to adversely affect CCV steelhead DPS during this period because it has a positive effect on the species and its critical habitat.

4.4.2 Scenario 2 Compared to Scenario 4

Similarly, Figures 4-7 through 4-11 show that, for all CCV steelhead DPS lifestages, from July through November in Dry and Critically Dry WYs the monthly average number of river miles of suitable water temperature under Scenario 2, All FEIS, would never be less than and would usually be significantly more than the monthly average number of river miles of suitable water temperature under Scenario 4, All Unimpaired. Therefore, Scenario 2 as compared to Scenario 4 is not likely to adversely affect CCV steelhead DPS during this period because it has a positive effect on the species and its critical habitat.

4.4.3 Scenario 3 Compared to Scenario 2

A review of Figures 4-7 through 4-11 show that, in most months, Scenario 2, All FEIS, would result in a small reduction in the monthly average of river miles of suitable water temperature for all CCV steelhead DPS lifestages as compared to Scenario 1, All Baseline. The analysis below by lifestage focuses on NID's P-2266's component part of that small reduction as determined by Scenario 3.

4.4.3.1 Adult Immigration & Holding

Figure 4-7 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CCV steelhead DPS Adult Immigration and Holding. Table 4-15 shows the incremental change by month in the number of river miles of suitable water temperature by project for CCV steelhead DPS Adult Immigration and Holding.

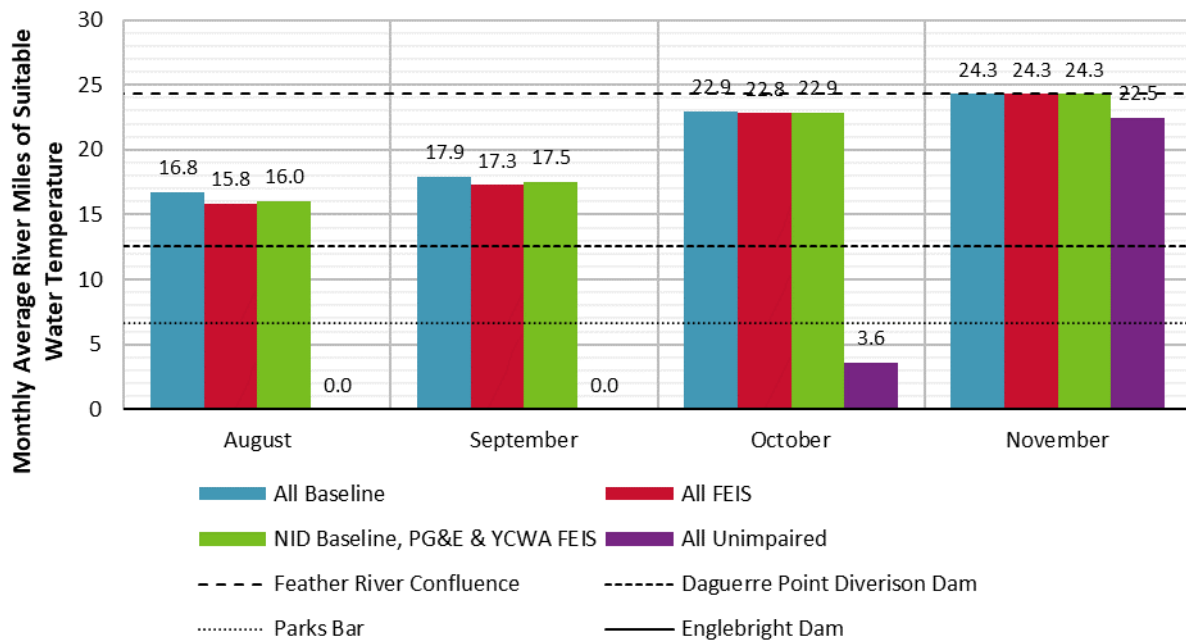


Figure 4-7. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 64.0°F or less) from August through November in Dry and Critically Dry Water Years during the applicable period for CCV steelhead DPS – Adult Immigration and Holding.

Table 4-15. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CCV steelhead DPS - Adult Immigration and Holding.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Adult Immigration & Holding	Jul	-- ²	--	--	--
	Aug	0.0	16.8	-1.0	-0.2
	Sep	0.0	17.9	-0.6	-0.2
	Oct	3.6	22.9	-0.1	-0.1
	Nov	22.5	24.3	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-3.

Scenario 2 as compared to Scenario 1 would result in a reduction in the monthly average number of river miles of suitable water temperature. However, NID's P-2266 would be responsible for a very small part of this small reduction. Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for CCV steelhead DPS Adult Immigration and Holding by up to 0.2 mile - about 1,000 feet. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Adult

Immigration and Holding for three reasons. First, this very small reduction in habitat would occur well downstream of Daguerre Point Dam in areas not typically used by this lifestage. Under Scenario 2, suitable water temperatures extend downstream at least 15.8 miles - three miles downstream of Daguerre Point Dam. Therefore, the primary habitat used by this lifestage would be unaffected. Second, the reduction in habitat is insignificant – about 1,000 feet with between 15.8 and 24.3 river miles, depending on the month, of suitable water temperature still available. Third, a reduction of about 1,000 feet in habitat in this less than prime habitat at the downstream end of habitat would have very little effect on individual fishes, which could certainly swim upstream 1,000 feet to habitat with more suitable water temperature.

Since the effects, which are unlikely to occur, would be extremely small and not likely to result in take if the effects occurred at all, FERC’s issuance of a new P-2266 license to NID is not likely to result in jeopardy. In addition, when compared to Scenario 4, All Unimpaired, NID’s P-2266 when taken in combination with the project’s past effects and the effects of PG&E’s P-2310 and YCWA’s P-2246 and P-1403 would have no effect or a positive effect to CCV steelhead DPS Adult Immigration and Holding.

4.4.3.2 Fry Rearing

Figure 4-8 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CCV steelhead DPS Fry Rearing and Table 4-16 shows the incremental change by month in the number of river miles of suitable water temperature by project for CCV steelhead DPS Fry Rearing.

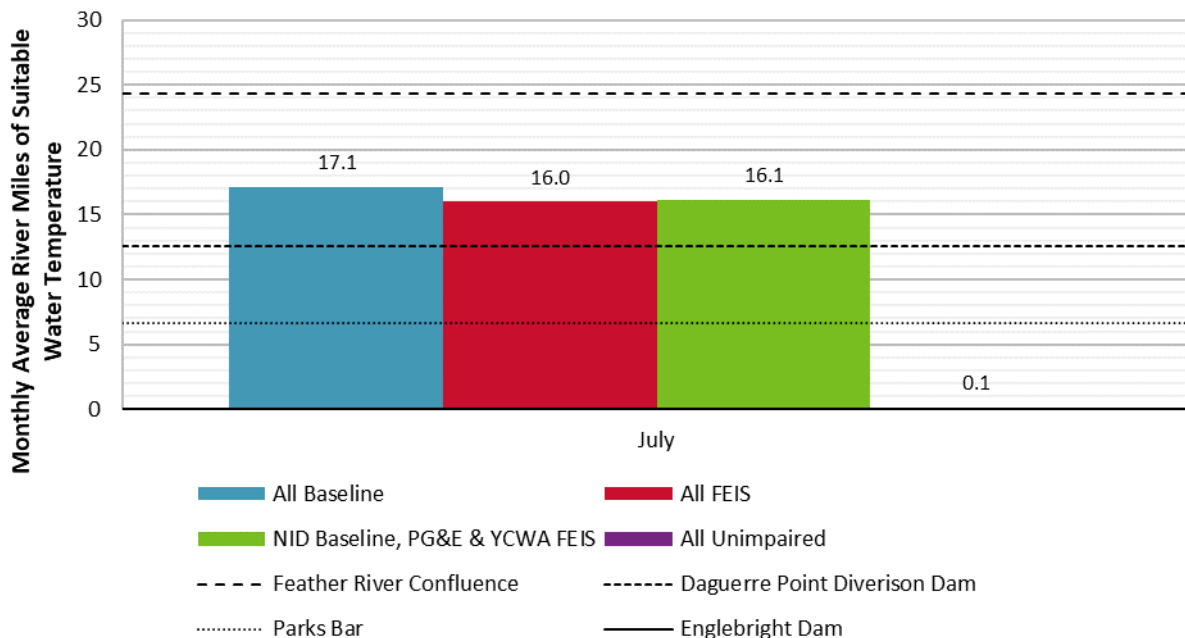


Figure 4-8. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 65.0°F or less) in July in Dry and Critically Dry Water Years during the applicable period for CCV steelhead DPS – Fry Rearing.

Table 4-16. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CCV steelhead DPS – Fry Rearing.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Fry Rearing	Jul	0.1	17.1	-1.1	-0.1
	Aug	-- ²	--	--	--
	Sep	--	--	--	--
	Oct	--	--	--	--
	Nov	--	--	--	--

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-3.

Scenario 2 as compared to Scenario 1 would result in a reduction of 1.1 river miles of suitable water temperature. However, NID's P-2266 would be responsible for only 0.1 river mile – about 500 feet of the reduction. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Fry Rearing for three reasons. First, this extremely small reduction in habitat would occur well downstream of Daguerre Point Dam in areas not typically used by this lifestage. Under Scenario 2, suitable water temperatures extend downstream at least 16.0 miles – more than three miles downstream of Daguerre Point Dam. Therefore, the primary habitat used by this lifestage would be unaffected. Second, the reduction in habitat is insignificant – about 500 feet with more than 16.0 river miles of suitable water temperature still available. Third, a reduction of about 500 feet in habitat in this less than prime habitat at the downstream end of habitat would have very little effect on individual fishes, which could certainly swim upstream 500 feet to habitat with more suitable water temperature.

Since the effects, which are extremely unlikely to occur, on CCV steelhead DPS Fry Rearing would be extremely small and not likely to result in take if the effects occurred at all, FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy. In addition, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with the project's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 (i.e., Scenarios 1 and 2) would have a positive effect to CCV steelhead DPS Fry Rearing.

4.4.3.3 Juvenile Rearing

Figure 4-9 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CCV steelhead DPS Juvenile Rearing. Table 4-17 shows the incremental change by month in the number of river miles of suitable water temperature by project for CCV steelhead DPS Juvenile Rearing.

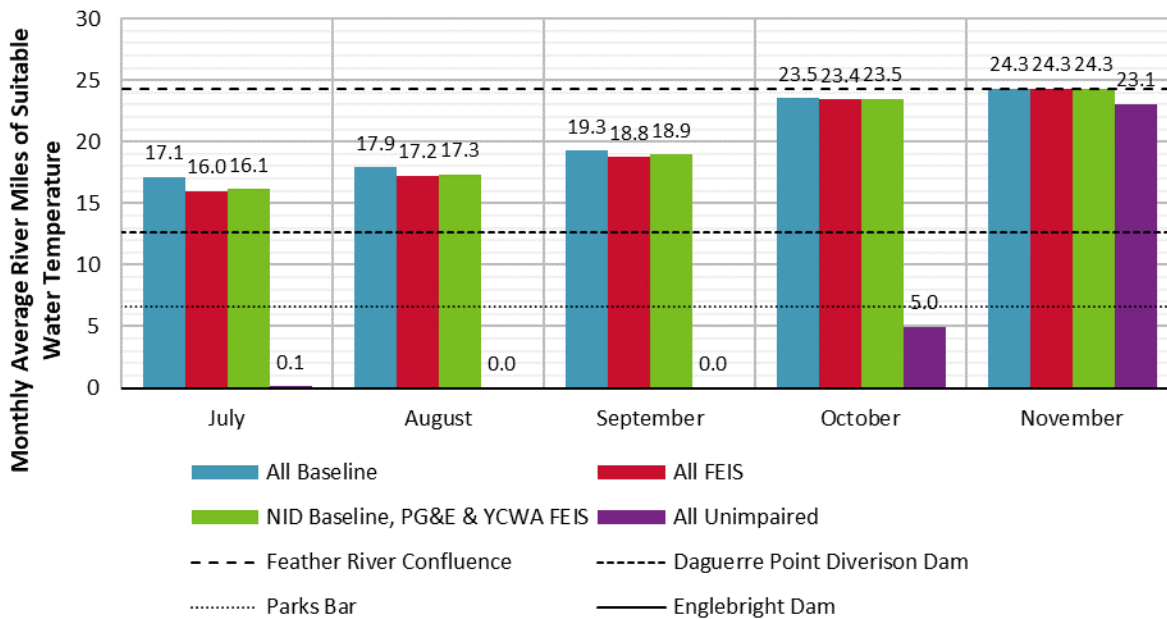


Figure 4-9. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 65.0°F or less) in July through November in Dry and Critically Dry Water Years during the applicable period for CCV steelhead DPS – Juvenile Rearing.

Table 4-17. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CCV steelhead DPS – Juvenile Rearing.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Juvenile Rearing	Jul	0.1	17.1	-1.1	-0.1
	Aug	0.0	17.9	-0.7	-0.1
	Sep	0.0	19.3	-0.5	-0.1
	Oct	5.0	23.5	-0.1	-0.1
	Nov	23.1	24.3	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for CCV steelhead DPS Juvenile Rearing by only 0.1 mile, or about 500 feet. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Juvenile Rearing for three reasons. First, this very small reduction in habitat would occur well downstream of the habitat typically used by this lifestage. Some juvenile steelhead may rear in the lower Yuba River for up to a few months and others may spend from one to 3 years rearing in the river. Studies since the late 1980's indicate that most juvenile steelhead

rearing in the Yuba River occurs upstream of Daguerre Point Dam (CDFG 1991,⁵⁰ SWRI *et al.* 2000⁵¹). Under Scenarios 1, 2 and 3, suitable water temperatures extend downstream at least 16.0 miles – more than three miles downstream of Daguerre Point Dam. Therefore, the primary habitat used by this lifestage would be unaffected. Second, the reduction in habitat is insignificant – about 500 feet out of 16.0 to 24.3 river miles of habitat with suitable water temperature. Third, a reduction of about 500 feet in less than prime habitat at the downstream end of habitat is discountable. This small amount of reduced habitat is likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Juvenile Rearing since individual fishes could certainly swim upstream 500 feet to habitat with more suitable water temperature.

Since the effects, which are extremely unlikely to occur, on CCV steelhead DPS Juvenile Rearing would be extremely small and not likely to result in take if the effects occurred at all, FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy. Further, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with the project's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 would have a positive effect to CCV steelhead DPS Juvenile Rearing.

4.4.4 Juvenile Downstream Movement

Figure 4-10 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CCV steelhead DPS Juvenile Downstream Movement. Table 4-18 shows the incremental change by month in the number of river miles of suitable water temperature by project for CCV steelhead DPS Juvenile Downstream Movement.

⁵⁰ California Department of Fish and Game (CDFG). 1991. Lower Yuba River Fisheries Management Plan. California Department of Fish and Game. Stream Evaluation Report No. 91-1. February 1991. Sacramento, California.

⁵¹ SWRI, JSA, and I. BE. 2000. Hearing Exhibit S-YCWA-19. Expert Testimony on Yuba River Fisheries Issues. Prepared for the California State Water Resources Control Board Water Rights Hearing on Lower Yuba River February 22-25 and March 6-9, 2000.

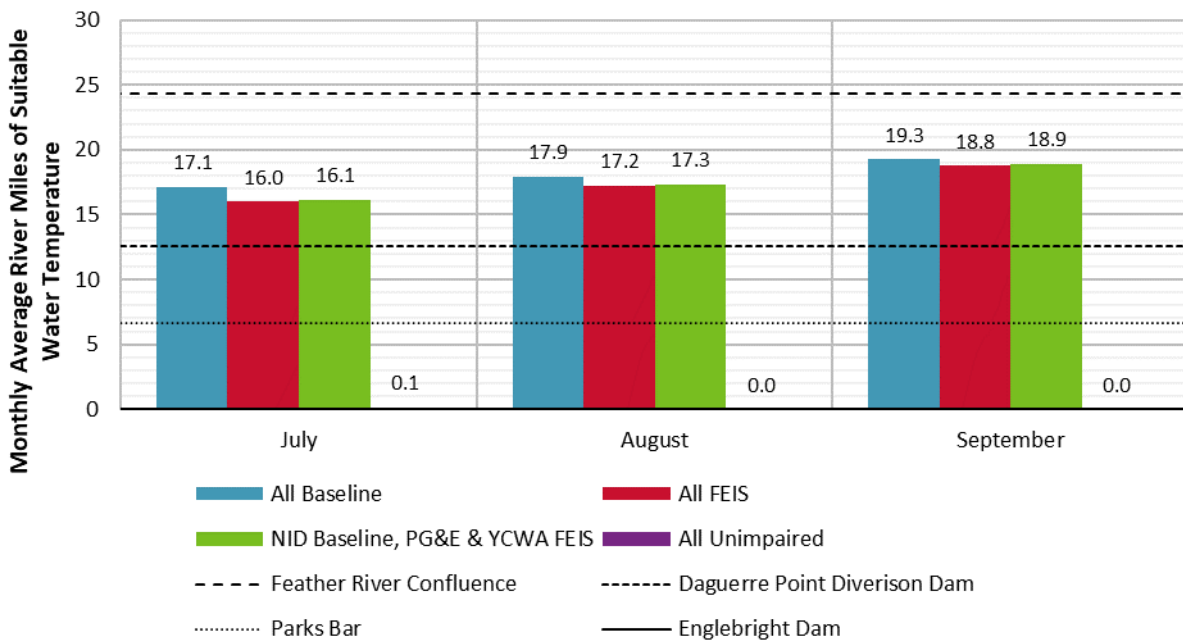


Figure 4-10. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 65.0°F or less) from July through September in Dry and Critically Dry Water Years during the applicable period for CCV steelhead DPS – Juvenile Downstream Movement.

Table 4-18. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CCV steelhead DPS – Juvenile Downstream Movement.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Juvenile Downstream Movement	Jul	0.1	17.1	-1.1	-0.1
	Aug	0.0	17.9	-0.7	-0.1
	Sep	0.0	19.3	-0.5	-0.1
	Oct	-- ²	--	--	--
	Nov	--	--	--	--

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-3.

Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for CCV steelhead DPS Juvenile Downstream Movement by only 0.1 mile, or about 500 feet. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Juvenile Downstream Movement for two reasons. First, the reduction in habitat is insignificant – about 500 feet out of 16.0 to 18.8 river miles of habitat with suitable water temperature. Second, a reduction of about 500 feet is discountable because it is

likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Juvenile Downstream Movement.

In summary, operations of P-2266 in combination P-2310 and P-2246 under Scenarios 1 and 2 have a significant beneficial effect on habitat for CCV steelhead DPS Juvenile Downstream Movement as compared to Scenario 4. While some reduction in river miles of suitable water temperature would occur under Scenario 2 as compared to Scenario 1, the portion of the reduction attributable to NID's P-2266's would be extremely small (i.e.~ 500 feet) and not likely to result in take if the effects occurred at all. FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy.

4.4.5 Smolt (Yearling+) Emigration

Figure 4-11 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for CCV steelhead DPS Smolt (Yearling+) Emigration and Table 4-19 shows the incremental change by month in the number of river miles of suitable water temperature by project for CCV steelhead DPS Smolt (Yearling+) Emigration.

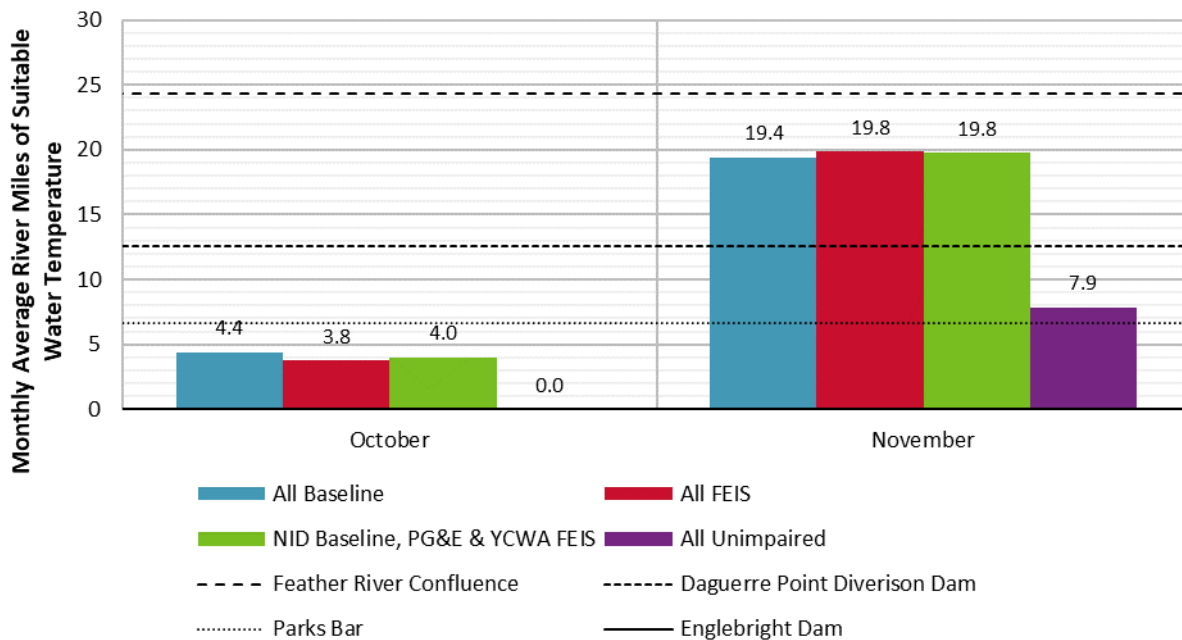


Figure 4-11. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 55.0°F or less) from October through November in Dry and Critically Dry Water Years during the applicable period for CCV steelhead DPS – Smolt (Yearling+) Emigration.

Table 4-19. Incremental change in average monthly number of river miles of suitable water temperature by lifestage in the Yuba River Downstream of Englebright Dam attributable to NID's P-2266 - CCV steelhead DPS - Smolt (Yearling+) Emigration.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Smolt (Yearling+) Emigration	Jul	-- ²	--	--	--
	Aug	--	--	--	--
	Sep	--	--	--	--
	Oct	0.0	4.4	-0.6	-0.2
	Nov	7.9	19.4	+0.4	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-3.

Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for CCV steelhead DPS Smolt (Yearling+) Emigration by 0.2 mile, or about 1,00 feet in October and have no effect in November. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Juvenile Smolt (Yearling+) Emigration. The reduction in habitat is insignificant – about a 1,000 feet out of 3.8 river miles of habitat with suitable water temperature. Second, a reduction of about 1,000 feet is discountable because it is likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Juvenile Smolt (Yearling+) Emigration.

Operations of P-2266 in combination P-2310 and P-2246 under Scenarios 1 and 2 have a significant beneficial effect on habitat for CCV steelhead DPS Smolt (Yearling+) Emigration as compared to Scenario 4. While some reduction in river miles of suitable water temperature would occur under Scenario 2 as compared to Scenario 1, the portion of the reduction attributable to NID's P-2266's would be extremely small (i.e.~ 1,000 feet) and not likely to result in take if the effects occurred at all. FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy.

4.5 Suitable Water Temperatures in the Lower Yuba River during the Target Period – NA Green Sturgeon Southern DPS

Table 4-20 lists the two model runs NID made for Scenarios 1 through 4 to assess the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures for the various lifestages of NA green Sturgeon Southern DPS. Although suitable habitat reported in the section includes the reach upstream of Daguerre Point Dam, NA green sturgeon Southern DPS usable habitat is currently limited to the reach downstream of Daguerre Point Dam.

Table 4-20. List of figures showing for Scenarios 1 through 4 the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures for the various lifestages of NA green Sturgeon Southern DPS.

Model Run	Lifestage	Period and Suitable Water Temperatures							
		July	August	September	October	November			
11	Spawning & Egg Incubation	63.0°F							
12	Post-Spawning Holding & Juvenile Rearing/ Outmigration	61.0°F							

Source: Refer to Tables 3-4 and 3-6 for the periodicity and suitable water temperatures, respectively, for each NS green sturgeon Southern DPS lifestage.

¹ NID combined the Post-Spawning Holding and Juvenile Rearing & Outmigration lifestages into one model run since the two lifestages have the same periodicity in the Target Period (i.e., July through November) and the same suitable water temperature (i.e., 61.0°F or less).

Provided below for each NA green sturgeon Southern DPS lifestage are:

- A bar graph figure that displays by month the average number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperature during the target period for that lifestage for Scenario 1, All Baseline, Scenario 2, All FEIS, Scenario 3, NID Baseline, PG&E & YCWA FEIS, and Scenario 4, All Unimpaired. Monthly averages were calculated by summing the number of river miles each day for that part of the month for the lifestage in the target period and dividing the sum by the total number of days. Only months in which the lifestage would use the lower Yuba River, as shown in Table 4-12, are shown. In some cases, a bar for Scenario 4, All Unimpaired, is not shown because the scenario provides no miles of suitable water temperature.
- A table showing the incremental effects of P-2266.

Refer to Appendix B for a HEC-DSS view of the data used to compile the figures. Monthly exceedance plots of river miles of suitable water temperature are provided in Appendix C. Appendix D includes detailed tables providing the average number of river miles of suitable water temperatures by month under Scenario 1, All Baseline, and Scenario 2, All FEIS.

As stated above, river miles of suitable habitat presented below for all scenarios are likely underestimated and very small differences (e.g., 0.1 or 0.2) in predicted numbers of river miles of suitable water temperature between scenarios should be treated with some skepticism since, when dealing with over 24 river miles, small differences may be within a reasonably assumed approach/modeling error.

An effect on the number of river miles with suitable water temperature should not be assumed to be an equal effect on ESA-listed fishes.

4.5.1 Scenario 1 Compared to Scenario 4

Figures 4-12 through 4-13 show that, for all NA green sturgeon Southern DPS lifestages, from July through November in Dry and Critically Dry WYs the monthly average of number of river miles of suitable water temperature under Scenario 1 (i.e., current operations of NID's P-2266, PG&E's P-2310 and YCWA's P-2246 collectively) is significantly more than the monthly average

of number of river miles of suitable water temperature under Scenario 4 (i.e., All Unimpaired). Therefore, Scenario 1 as compared to Scenario 4 is not likely to adversely affect NA green sturgeon Southern DPS during this period because it has a positive effect on the species and its critical habitat.

4.5.2 Scenario 2 Compared to Scenario 4

Similarly, Figures 4-12 through 4-13 show that, for all NA green sturgeon Southern DPS lifestages, from July through November in Dry and Critically Dry WYs the monthly average of number of river miles of suitable water temperature under Scenario 2, All FEIS, would be significantly more than the monthly average of number of river miles of suitable water temperature under Scenario 4, All Unimpaired. Therefore, Scenario 2 as compared to Scenario 4 is not likely to adversely affect NA green sturgeon Southern DPS during this period because it has a positive effect on the species and its critical habitat.

4.5.3 Scenario 3 Compared to Scenario 2

A review of Figures 4-12 through 4-13 show that, in most months, Scenario 2, All FEIS, would result in a small reduction in the monthly average of river miles of suitable water temperature for all NA green sturgeon Southern DPS lifestages as compared to Scenario 1, All Baseline. The analysis below by lifestage focuses on NID's P-2266's component part of that small reduction as determined in Scenario 3.

4.5.3.1 Spawning and Egg Incubation

Figure 4-12 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for NA green sturgeon Southern DPS Spawning and Egg Incubation. Table 4-21 shows the incremental change by month in the number of river miles of suitable water temperature by project for NA green sturgeon Southern DPS Spawning and Egg Incubation.

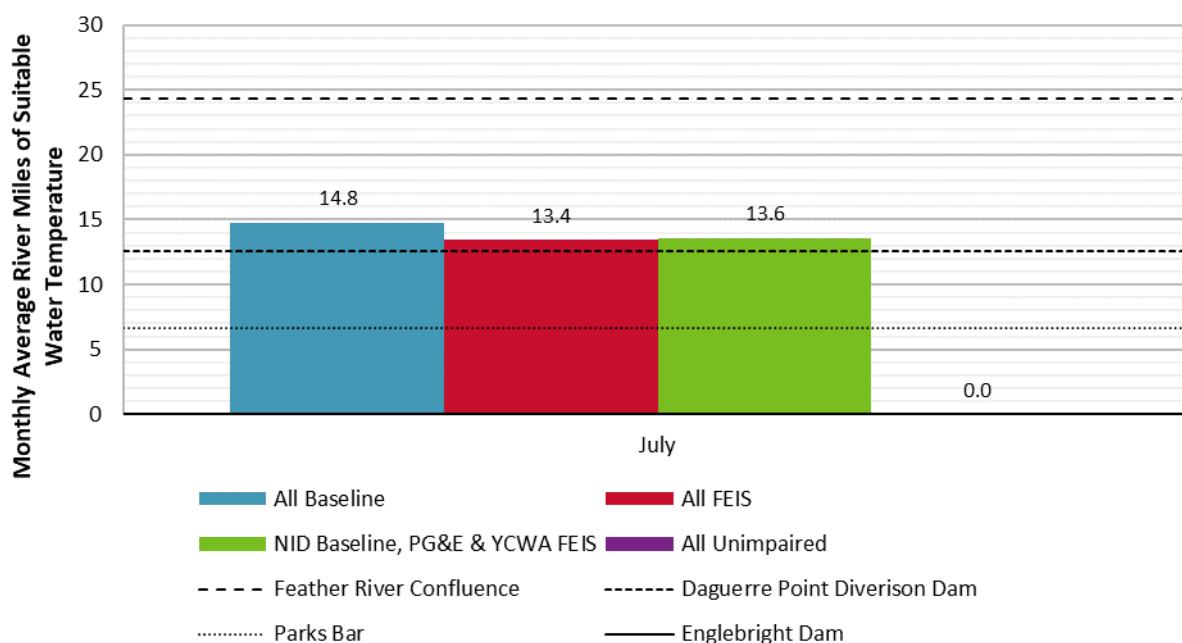


Figure 4-12. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 63.0°F or less) in July in Dry and Critically Dry Water Years during the applicable period for NA green sturgeon Southern DPS – Spawning and Egg Incubation Lifestage.

Table 4-21. Incremental change in monthly average number of river miles of suitable water temperature by lifestage in the Yuba River downstream of Englebright Dam attributable to NID's P-2266 - NA green sturgeon Southern DPS - Spawning and Egg Incubation lifestage.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Spawning & Egg Incubation	Jul	0.0	14.8	-1.4	-0.2
	Aug	-- ²	--	--	--
	Sep	--	--	--	--
	Oct	--	--	--	--
	Nov	--	--	--	--

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

² A dashed line shows months when the lifestage does not use the Yuba River as shown in Tables 3-2, 3-3 and 3-4, or when the month is outside the modeling period of record (i.e., October and November 2008).

Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for NA green sturgeon Southern DPS Spawning and Egg Incubation by 0.2 mile, or about 1,000 feet. This very small reduction in habitat attributable to NID's P-2266 is not likely to adversely affect Spawning and Egg Incubation. Daguerre Point Dam, which is 12.7 river miles downstream of Englebright Dam, is the upstream limit of designated

critical habitat for NA green sturgeon Southern DPS, and the dam is considered to block upstream movement of the fish. In 2018, California DFW documented green sturgeon spawning in the lower Yuba River for the first time finding approximately 270 green sturgeon eggs on an egg mat deployed immediately downstream of Daguerre Point Dam. In 2019, CDFW did not collect any green sturgeon eggs although one early-stage juvenile green sturgeon was reportedly observed by CDFW biologists in edge-water habitat downstream of Daguerre Point Dam. (Beccio 2018,⁵² Beccio 2019.⁵³). NID's P-2266's small amount of reduced habitat is likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Spawning and Egg Incubation, which appears to occur just downstream of Daguerre Point Dam.

Since the effects, which are extremely unlikely to occur, on NA green sturgeon Southern DPS Spawning and Egg Incubation would be extremely small and not likely to result in take if the effects occurred at all, FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy. Further, when compared to Scenario 4, All Unimpaired, NID's P-2266 when taken in combination with P-2266's past effects and the effects of PG&E's P-2310 and YCWA's P-2246 and P-1403 would have a positive effect to NA green sturgeon Southern DPS - Spawning and Egg Incubation.

4.5.3.2 Post-Spawning Holding & Juvenile Rearing/Outmigration

Figure 4-13 shows the average monthly number of river miles of suitable water temperature downstream of Englebright Dam for all scenarios for NA green sturgeon Southern DPS Post-Spawning Holding & Juvenile Rearing/Outmigration. Table 4-22 shows the incremental change by month in the number of river miles of suitable water temperature by project for NA green sturgeon Southern DPS Post-Spawning Holding & Juvenile Rearing/Outmigration.

⁵² Beccio, M. 2018. 2018 Yuba River Sturgeon Spawning Study. California Department of Fish and Wildlife.

⁵³ Beccio, M. 2019. 2019 Yuba River Sturgeon Spawning Study. California Department of Fish and Wildlife.

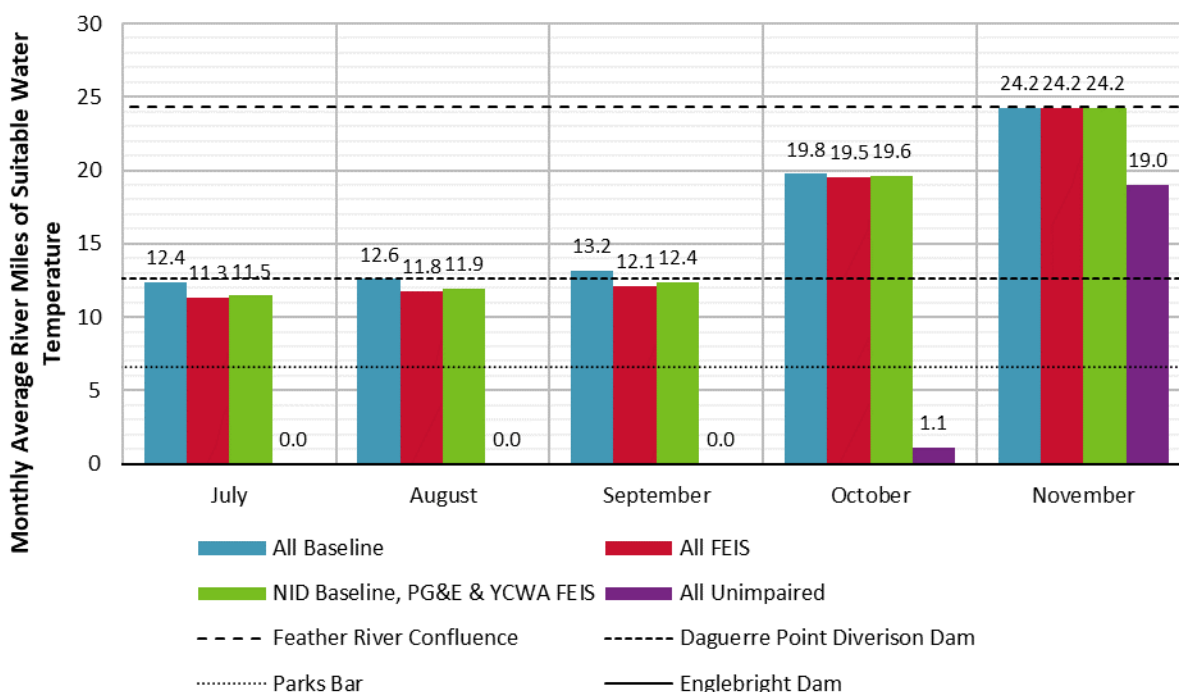


Figure 4-13. Average monthly number of Yuba River miles from Englebright Dam downstream that would provide suitable water temperatures (i.e., 61.0°F or less) from July through November in Dry and Critically Dry Water Years in the applicable period for NA green sturgeon, Southern DPS – Post-Spawning Holding Lifestage and Juvenile Rearing and Outmigration Lifestage.

Table 4-22. Incremental change in monthly average number of river miles of suitable water temperature by lifestage in the Yuba River downstream of Englebright Dam attributable to NID's P-2266 - NA green sturgeon Southern DPS.¹

Lifestage	Calendar Year Month	River Miles of Suitable Water Temperature below Englebright Dam		Change in River Miles of Suitable Water Temperature as Compared to Scenario 1, All Baseline	Incremental Change in River Miles of Suitable Water Temperature as Shown in Scenario 2, All FEIS, Attributable to P-2246
		Scenario 4, All Unimpaired	Scenario 1, All Baseline	Scenario 2, All FEIS	Scenario 3, NID Baseline, PG&E and YCWA FEIS
Post-Spawning Holding & Juvenile Rearing/ Outmigration	Jul	0.0	12.4	-1.1	-0.2
	Aug	0.0	12.6	-0.8	-0.1
	Sep	0.0	13.2	-1.1	-0.3
	Oct	1.1	19.8	-0.3	-0.1
	Nov	19.0	24.2	0.0	0.0

Source: Appendix B.

¹ Average monthly number of river miles is calculated by averaging the change in number of river miles for each day of periodicity in that month.

Scenario 3 shows that NID's P-2266, as described in FERC's 2014 FEIS, would reduce monthly average available suitable habitat for NA green sturgeon Southern DPS Post-Spawning Holding Lifestage and Juvenile Rearing and Outmigration. However, as shown in Figure 4-13, under all scenarios only in October and November would monthly average water temperatures be suitable downstream of Daguerre Point Dam. In those months, reduction in habitat attributable to NID's

P-2266 would be up to 0.1 river mile, or about 500 feet. This very small reduction in river miles of average monthly suitable water temperatures attributable to NID's P-2266 is not likely to adversely affect Post-Spawning Holding Lifestage and Juvenile Rearing and Outmigration for three reasons. First, this very small reduction would not likely affect the deep-pool habitats used the lifestage. Modeling conducted for YCWA's P-2246 relicensing demonstrated that a substantial amount of green sturgeon deep-water pool holding habitat and spawning habitat is available downstream of Daguerre Point Dam. For the February through November period, which represents the potential green sturgeon adult holding, spawning and post-spawning holding period, the amount of deep-water pool habitat ranged from about 6 to 45 acres annually over the 41-year period of simulation. Green sturgeon larvae do not exhibit the initial pelagic swim-up behavior characteristic of other *Acipenseridae*. They are strongly oriented to the bottom and exhibit nocturnal activity patterns (NMFS 2009⁵⁴). After six days, the larvae exhibit nocturnal swim-up activity (Deng *et al.* 2002⁵⁵) and nocturnal downstream migration movements (Kynard *et al.* 2005⁵⁶). After approximately 10 days, larvae begin feeding and growing rapidly. Under laboratory conditions, green sturgeon larvae cling to the bottom during the day and move into the water column at night (Van Eenennaam *et al.* 2001⁵⁷). Second, the reduction in habitat is insignificant – about a 500 feet as compared to the 6.8 river miles of suitable water temperatures under Scenario 2 with suitable water temperature below Daguerre Point Dam. Third, this small amount of reduced habitat is likely within the modeling error and, if it occurred, it would be extremely unlikely to adversely affect Post-Spawning Holding Lifestage and Juvenile Rearing and Outmigration.

Operations of P-2266 in combination P-2310 and P-2246 under Scenarios 1 and 2 have a significant beneficial effect on habitat for NA green sturgeon Southern DPS Post-Spawning Holding Lifestage and Juvenile Rearing and Outmigration as compared to Scenario 4. While some reduction in river miles of suitable water temperature would occur under Scenario 2 as compared to Scenario 1, the portion of the reduction attributable to NID's P-2266 would be extremely small and not likely to result in take if the effects occurred at all. FERC's issuance to NID of a new P-2266 license is not likely to result in jeopardy.

5 POTENTIAL P-2266 OPERATIONAL ACTIONS CONSIDERED BY NID AND NID'S DETERMINATIONS

This section discusses the various alternatives to P-2266, as described in FERC's 2014 FEIS, that NID considered to protect ESA-listed fishes and their designated critical habitat in the lower Yuba River from July through November in Dry and Critically Dry WYs.

⁵⁴ United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). 2009. Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project. NMFS Southwest Region. June 2009.

⁵⁵ Deng, X., J. P. Van Eenennaam, and S. I. Doroshov. 2002. Comparison of Early Life Stages and Growth of Green and White Sturgeon. American Fisheries Society Symposium 28:237-248.

⁵⁶ Kynard, B., E. Parker, and T. Parker. 2005. Behavior of Early Life Intervals of Klamath River Green Sturgeon, *Acipenser medirostris*, with a Note on Body Color. Environmental Biology of Fishes 72(1):85-97.

⁵⁷ Van Eenennaam, J. P., M. A. H. Webb, X. Deng, and S. I. Doroshov. 2001. Artificial Spawning and Larval Rearing of Klamath River Green Sturgeon. Transactions of the American Fisheries Society 130: 159-165

5.1 Additional P-2266 Releases from July through November in Dry and Critically Dry Water Years

NID does not propose to make P-2266 flow releases from July through November in Dry and Critically Dry WYs in addition to those releases described in FERC's 2014 FEIS for the reasons described below.

5.1.1 P-2266 as proposed in the 2014 FEIS should not be required to make additional flow releases from July through November in Dry and Critically Dry WYs because issuance of the new P-2266 license is not likely to adversely affect ESA-listed fishes during those periods.

As described in Section 4, compared to unimpaired conditions (i.e. Scenario 4, All Unimpaired), operations of NID's P-2266, PG&E's P-2310 and YCWA's P-2246 collectively under existing conditions (i.e., Scenario 1, All Baseline) and operations under the terms and conditions in the 2014 and 2019 FEIS's (i.e., Scenario 2, All FEIS) have a positive effect on ESA-listed fishes in the lower Yuba River from July through November in Dry and Critically Dry WYs. Under both scenarios, the monthly average number of river miles of suitable water temperature for ESA-listed fishes is never less than, and usually significantly more than, the monthly average number of river miles of suitable water temperature that would occur under unimpaired conditions.

For most lifestages, Scenario 2, All FEIS, as compared to Scenario 1, All Baseline, would result in a slight reduction in the monthly average number of river miles of suitable water temperature for ESA-listed species. However, the amount of that reduction attributable to NID's P-2266 is extremely small - usually between 500 and 1,000 feet, and likely within the modeling error band - with many river miles of suitable habitat unaffected. This extremely small reduction would likely have an insignificant adverse effect, if any effect occurred at all, on ESA-listed fishes from July through November in Dry and Critically Dry WYs. Therefore, FERC's issuance to NID of a new license for P-2266 is not likely to adversely affect ESA-listed fishes from July through November in Dry and Critically Dry WYs.

5.1.2 Even if P-2266 as proposed in the 2014 FEIS is likely to adversely affect ESA-listed fishes from July through November in Dry and Critically Dry WYs, additional P-2266 flow releases during these periods would not improve, but would degrade, conditions for ESA-listed fishes in the lower Yuba River.

In drier years, releases from P-2266 facilities under the 2014 FEIS would normally be at minimum flow levels from July through November. In comparison, under the FERC's and USACE's 2019 FEIS, YCWA's P-2246 does not have a minimum flow requirement at Smartsville from mid-April through August. During most of this period, YCWA releases flows to meet irrigation demands by its Member Units, most of whom divert the flow upstream of Daguerre Point Dam, and to meet minimum flow requirements at Marysville. As a result, flows in the lower Yuba River often reduce considerably after September 30 as YCWA's releases shift from irrigation to just minimum flows at Marysville. As a comparison:

Relative Minimum Flow Requirements in 2014 and 2019 FEIS's from July through November in Dry and Critically Dry years:⁵⁸

- **4 to 10 cfs.** NID's P-2266's minimum flow requirement in the Middle Yuba River
- **7 and 20 cfs.** NID's P-2266's minimum flow requirement in the Middle Yuba River
- **500 to 700 cfs.** YCWA's P-2246's minimum flow requirement at Smartsville from September through November (no minimum flow requirement at Smartsville in July and August)
- **150 to 500 cfs.** YCWA's P-2246's minimum flow requirement at Marysville

In addition, FERC's and USACE's 2019 FEIS includes strict ramping limitations on P-2246 releases below Englebright Dam, with particular importance on the September through mid-December period.

P-2266 minimum flow releases travel approximately 42 miles downstream in the Middle Yuba River before entering Englebright Reservoir: approximately 30 miles to where the flows entering P-2246's Our House Diversion Dam impoundment and another 12 miles downstream from the impoundment to Englebright Reservoir. On the South Yuba River, P-2266 minimum flow releases travel approximately 40 miles downstream before entering Englebright Reservoir. In summer, these flows rapidly reach equilibrium temperature resulting in warm water entering YCWA's P-2246's Our House Diversion Dam impoundment and Englebright Reservoir, as demonstrated by NID in its June 17, 2021, filing⁵⁹ that modeled various flow releases as a percentage of unimpaired flow. These showed inflow temperatures exceed 68°F by as early as mid-June in drier years. In no case would increasing FEIS 2014 releases from P-2266 facilities from July through November in Dry and Critically Dry WYs result in cooler water entering Our House Diversion Dam impoundment or Englebright Reservoir – only more warm water. As a consequence of more warm water entering Englebright Reservoir, YCWA would likely decrease cold water releases from New Bullards Bar Dam, resulting in less suitable conditions in the lower Yuba River for ESA-listed fishes.

5.1.3 If FERC requires NID make additional P-2266 flow releases from July through November in Dry and Critically Dry WYs, FERC should analyze the unintended consequences of the additional flow releases.

If, notwithstanding the above, FERC requires NID to release more water from its P-2266 facilities, as compared to releases required in FERC's 2014 FEIS from July through November in Dry and Critically Dry WYs, the additional releases may have effects on aquatic and recreational resources upstream of Englebright Reservoir as well as on P-2266's generation and NID's water deliveries. NID and agencies collaborated for more than four years to develop protection, mitigation and enhancement (i.e., PM&E) measures, especially for foothill yellow-legged frog, of FYLF (*Rana boylei*), a species protected under the California Endangered Species Act and proposed for

⁵⁸ As shown in Table 6.1-4, YCWA P-2246's schedule of flow releases below Englebright Dam for the Dry and Critically Dry WYs addressed in this filing range from Conference Years to Schedule 2 Years. Refer to Section 6.1.8 for additional discussion.

⁵⁹ *Ibid.*

protection under the federal ESA, and rainbow trout (*O. mykiss*). In addition, these PM&E measures require NID to make extensive improvements in recreation facilities at P-2266 reservoirs. The PM&E measures were carefully balanced with the needs of the various resources and to preserve NID water deliveries and power generation. Most of the PM&E measures are incorporated into the United States Department of Agriculture, Forest Service, FPA Section 4(e) final terms and conditions. If FERC requires additional releases from P-2266's facilities from July through November in Dry and Critically Dry WYs, FERC should weigh the benefits of such releases with the impacts to upstream resources, including FYLF, rainbow trout, recreation and NID's water delivery and power generation. In addition, FERC should consider the effects on P-2266 operation costs and potentially facility upgrades needed to make such additional releases. NID has not included herein such an analysis because, at this time, no party has formally proposed such P-2266 additional releases, including volume and timing, from July through November in Dry and Critically Dry WYs.

5.1.4 In addition, if FERC requires NID make additional P-2266 flow releases from July through November in Dry and Critically Dry WYs, NID should receive any benefits realized by the use of these additional flows in YCWA's P-2246.

If, notwithstanding the above, FERC requires NID to release more water from P-2266 facilities, as compared to releases required in FERC's 2014 FEIS, from July through November in Dry and Critically Dry WYs, the additional releases would have no environmental benefit in the lower Yuba River and would essentially be a gift of water YCWA's P-2246 and P-1403. In that case, FERC should require that YCWA compensate NID for the additional releases, including any resulting P-2246 and P-1403 power benefits and YCWA water sale benefits, and any NID incurred cost related to facility modification or changes in PM&E measures for such releases. Further, if the additional releases result in water shortages to NID customers, FERC should require that YCWA provide funds to NID so that NID can acquire an equal amount of water to offset the water shortages. Under FERC's 2014 FEIS, NID's P-2266's and PG&E's P-2310 would already be providing an average of 25,764 acre-feet of water to YCWA in Dry and Critically Dry WYs (Table 4-5), which YCWA's P-2246's and P-1403's can use for power and water sales, without compensating NID or PG&E.

5.1.5 If FERC wishes to reduce any effects of P-2266 on ESA-listed fishes, the simplest and most direct solution is to reduce, not increase, P-2266 flow releases in the 2014 FEIS.

As shown in Section 4, in most cases Scenario 4, All Unimpaired, provides little or no habitat for ESA-listed fishes from July through November in Dry and Critically Dry WYs, and NID's incremental effects under the All FEIS scenario are minor. Further, as described in Section 5.1.2, increasing P-2266 flow requirements during this period would not likely adversely effect, not improve conditions, for ESA-listed fishes. If FERC would, for some reason, want to reduce these minor effects to Baseline levels, the simplest approach would be to reduce the P-2266 minimum flow requirements to baseline levels in those months, which would result in no P-2266 effects on ESA-listed fishes under Scenario 2.

5.2 Additional P-2266 Releases in Spring in Dry and Critically Dry WYs

In the September 12 and October 3, 2022, consultation meetings with NID, PG&E and NMFS, California DFW asked if additional releases from the Upstream Projects, such as 15,600 acre-feet in April of Dry and Critically Dry WYs, would improve conditions for ESA-listed fishes in the lower Yuba River during the following July through November period. NID generally examined the alternative informally posed by California DFW, notwithstanding the lack of specificity (e.g., split of flows between P-2266 and P-2310; which portion of P-2266's flows would be released in the Middle Yuba River and which portion in the South Yuba River; and the uncertainty of predicting in April if the following July through November period would Dry and/or Critically Dry WYs. As conservative assumptions, NID assumed the entire flow would be from P-2266 and that the April WY forecast would be the same in May. After a general assessment of this alternative, NID does not propose such additional releases and concluded such releases would have no benefit to ESA-listed fishes for the reasons stated below.

5.2.1 P-2266 should not be required to make additional flow releases in spring in Dry and Critically Dry WYs because P-2266 as proposed in the 2014 FEIS is not likely to adversely affect ESA-listed fishes from July through November in Dry and Critically Dry WYs.

As described in Section 5.1.1, P-2266 as proposed in FERC's 2014 FEIS is not likely to adversely affect ESA-listed species from July through November in Dry and Critically Dry WYs. Therefore, additional P-2266 releases in the spring, or at any other time, are not necessary to address any detrimental impact of project operations.

5.2.2 Additional P-2266 flow releases are not needed and would serve no purpose because P-2246's New Bullards Bar Reservoir has under Baseline conditions an adequately large cold-water pool to make any beneficial releases from July through November in Dry and Critically Dry WYs.

Additional P-2266 releases would only have benefit if they were required to augment the P-2246 New Bullards Bar Reservoir cold-water pool so YCWA would have adequate cold water for releases. This may occur if the P-2266 additional releases into the Middle Yuba River were diverted to New Bullards Bar Reservoir at P-2246's Our House Diversion Dam and resulted in a larger cold-water pool, or if P-2246 additional releases in the Middle Yuba River and South Yuba River offset releases that YCWA would otherwise make from New Bullards Bar Reservoir for releases from Englebright Dam, thereby preserving the cold-water pool for releases from July through November.

However, augmentation of P-2246's New Bullards Bar Reservoir cold-water pool with releases from P-2266 is not necessary because the reservoir already contains an adequately large cold-water pool in Dry and Critically Dry WYs, and additional releases from P-2266 would not result in additional cold water benefits. Figure 5.2-1 is a copy of a plot from a Microsoft™ PowerPoint slide presented by YCWA during the August 8, 2022, Consultation Meeting with NMFS and

California DFW. The New Bullards Bar Reservoir depth profile figure shows September 1 water temperatures from 1994 through 2019 that under historic conditions.

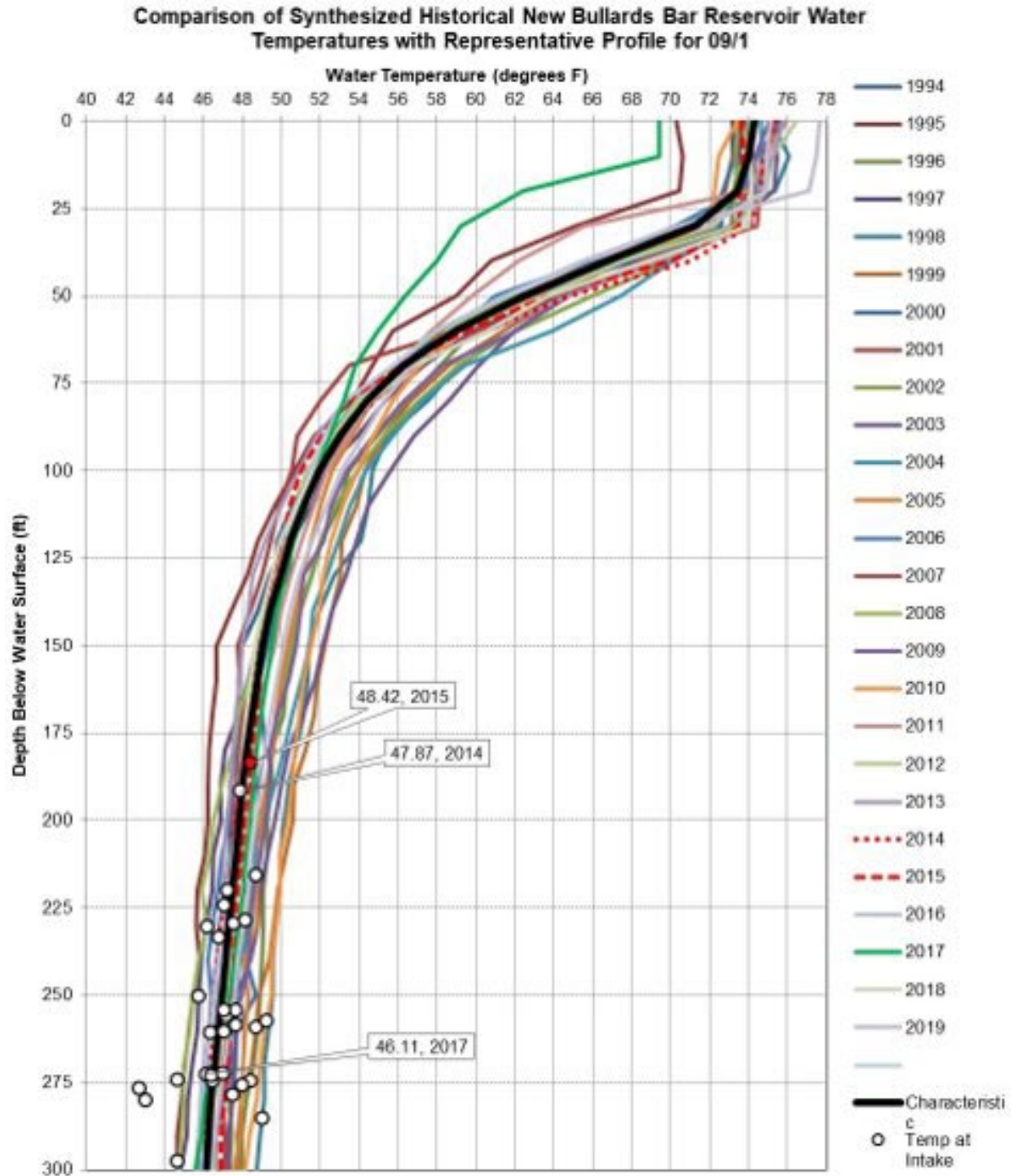


Figure 5.2-1. P-2246 New Bullards Bar Reservoir Water Temperature Profiles on September 1 from 1994 through 2019. Source: YCWA, August 8, 2022, Consultation Meeting #3.

YCWA's August 8, 2022, Microsoft™ PowerPoint stated the plot shows:

Temperature range at intake depth for September is 46.0°F to 49.2°F

and

Even in low storage years like 2014 & 2015, temperature at intake depth is
47.9°F, 48.2°F

Therefore, even under Baseline conditions, additional releases for NID's P-2266 would not improve P-2246's New Bullards Bar Reservoirs ability to cool water in the lower Yuba River in Dry and Critically Dry WYs under baseline conditions.

5.2.3 New Bullards Bar Reservoir's cold-water pool storage under Baseline conditions will be even larger if YCWA uses the New Colgate Powerhouse Upper Intake, as required by the State Water Board in its P-2246 WQC.

The P-2246 New Bullards Bar Reservoir cold-water pool would be even larger if YCWA uses Colgate Powerhouse Upper Intake. During the August 8, 2022, Consultation Meeting, YCWA said it was considering returning the New Colgate Powerhouse upper intake (i.e., not the shutters associated with the intake) to operation during a 2024 schedule outage and using the upper intake from March 1 to May 31, which would conserve the New Bullards Bar Reservoir cold-water pool later in the year. This is generally consistent with California DFW's FPA Section 10(j) recommendations during the P-2246 relicensing and is required in Condition 7 of the July 17, 2020, State Water Board's CWA Section 401 WQC that was issued for P-2246.⁶⁰ Condition 7 states, in part:

The Licensee shall, as soon as completing any necessary equipment and safety work and no later than three years following license issuance, operate the upper intake of the temperature control structure on the New Colgate Power Tunnel Intake during the months of March, April, and May. Prior to operation of the upper intake, the Licensee shall continue to operate the lower intake on the New Colgate Power Tunnel Intake during the months of March, April, and May. The Licensee shall consult with the Technical Review Group (TRG) during the annual meeting (Condition 22) to determine which New Colgate Power Tunnel Intake (i.e., does not need to be the upper intake) will be used during each of the months in the remainder of the water year (June – September).

NID notes that the Colgate Powerhouse Upper Intake and associated shutter system are project works under YCWA's existing P-2246 license and, as such, YCWA has a requirement to maintain all project works in good operating condition. NID understands that YCWA allowed the facilities to dip into disrepair. However, there is no need for the benefits of the Upper Intake to wait until a new license is issued for P-2246 – under YCWA's existing license, FERC could direct YCWA to repair and operate the Colgate Powerhouse Upper Intake and associated shutter system now.

⁶⁰ *Ibid.*

5.2.4 New Bullards Bar Reservoir storage would be even larger still under Scenario 2, All FEIS.

As shown in Section 4.2, under Scenario 2, All FEIS, as compared to Scenario 1, All Baseline, P-2246's gross storage at the end of the water delivery period (i.e., September 30) would increase by an average of 25,764 acre-feet, or 4.5 percent, at a cost to NID's P-2266's storage of 8,860 acre-feet (Tables 4-5 and 4-6). This increase in New Bullards Bar Reservoir storage would contribute to the cold-water pool.

5.2.5 Cooler water in the lower Yuba River in summer could be provided if YCWA constructs and operates the Narrows 2 Powerhouse Intake Extension, as ordered by the State Water Board in its 2003 Revised Decision 1644.

YCWA could more effectively use the cold-water pool in Englebright Reservoir from July through November in Dry and Critically Dry WYs if, as directed by the State Water Board in its July 13, 2003, Revised Water Rights Decision 1644 (State Water Board 2003⁶¹), YCWA extends its P-2246's Narrows 2 Powerhouse Intake into the deeper portions of Englebright Reservoir. Page 87 of the 2003 Revised Decision 1644 states:

This decision directs the YCWA to diligently pursue development of the Narrows II Powerhouse Intake Extension Project at Englebright Dam, in coordination with the USFWS, the DFG [California DFW], and NMFS. YCWA should submit a report to the Chief of the Division of Water Rights on the status of its application for funding and the progress of project development every six months from the date of this decision through the completion of project construction. Following construction, the Narrows II Powerhouse Intake Extension at Englebright Dam should be operated in conjunction with the multi-level outlet structure at New Bullards Bar Dam to minimize water temperature impacts on anadromous fish in the lower Yuba River. The effects of project operations should be monitored and, in consultation with the Temperature Advisory Committee, modifications should be made on a real-time basis to minimize adverse fishery impacts. [Emphasis Added.]

Specifically, pages 176 and 177 of the 2003 Revised Decision 1644 orders in part:

2. To minimize water temperature impacts on anadromous fish and other public trust resources in the lower Yuba River, permittee [YCWA] shall comply with the following terms and conditions:

⁶¹ State Water Resources Control Board (State Water Board) 2003. Revised Water Right Decision 1644 (Revised in accordance with SWRCB Order WR 2003-0016). In the Matter of: Fishery Resources and Water Right Issues of the Lower Yuba River. Involving Water Right Permits 15026, 15027, and 15030 Issued on Applications 5632, 15204, and 15574 of Yuba County Water Agency; Licenses 3984 and 3985 Issued on Applications 9927 and 12371 of Cordua Irrigation District; License 4443 Issued on Application 9899 of Hallwood Irrigation District; and Other Water Diversions by Various Parties Under Claim of Riparian Rights, Pre-1914 Appropriative Rights, and Contractual Rights. Adopted by the State Water Board on July 16, 2003.

- a. Permittee shall diligently pursue development of the Narrows II Powerhouse Intake Extension Project at Englebright Dam, in coordination with the Department of Fish and Game, the United States Fish and Wildlife Service and the National Marine Fisheries Service. Permittee shall submit proposals for project funding and prepare all appropriate CEQA documentation for project development in a timely manner. Permittee shall submit a report to the Chief of the Division of Water Rights on the status of its application for funding and the progress of project development every six months from the date of this Order through the completion of project construction.
- b. Permittee shall coordinate operation of available temperature control devices to minimize temperature impacts on anadromous fishery resources in the lower Yuba River. Permittee shall consult with the Temperature Advisory Committee (composed of representatives from the SWRCB, the Department of Fish and Game, the United States Fish and Wildlife Service, the National Marine Fisheries Service, the California Sportfishing Protection Alliance and the South Yuba River Citizens League) on a regular basis during the temperature control season (May through October). Permittee shall monitor water temperature effects of project operations and report to the Advisory Committee on a regular basis. Permittee shall discuss with the Committee current operations for temperature control and variances from the temperatures needed to provide suitable habitat for anadromous fish. Permittee shall make changes to project operations for temperature control as recommended by the Temperature Advisory Committee on a real-time basis, unless Permittee informs the Chief of the Division of Water Rights within 14 days that the Committee recommendation is infeasible and explains the basis for that conclusion. [Emphasis Added.]

As noted in the underlines sections above, Revised Decision 1644 clearly envisioned that the upper intake at New Bullards Bar Reservoir would be available along with the Narrows 2 Powerhouse Intake Extension to provide suitable water temperatures for ESA-listed fishes, and that YCWA would consult with NMFS, CDFW and USFWS regarding the coordinated operations of these two P-2246 facilities. **In effect, the State Water Board in Revised Decision 1640 anticipated the issue FERC is currently considering and required a specific solution, which should have been in place and operating for the past 20 years.**

The potential benefits of the Narrows 2 Powerhouse Intake Extension were well known over 20 years ago and yet YCWA, even in the face of Revised Decision 1644, has delayed. As summarized

at page 15 of YCWA's P-2246 relicensing Technical Memorandum 7-2, Potential Narrows 2 Powerhouse Intake Extension, dated November 2013 (YCWA 2013⁶²):

In 1999, YCWA conducted preliminary investigations of the potential benefits of installing an intake extension for the Narrows 2 Powerhouse that would access the colder, deeper water in Englebright Reservoir. Initial modeling indicated that temperature reductions of 1 to 6°F could potentially be achieved, depending on hydrologic conditions, release rates from New Bullards Bar Reservoir, and the final design and operation of a new intake. [Emphasis Added.]

In conformance with the Revised Decision 1644, YCWA has submitted reports to the State Water Board's Deputy Director almost every 6 months regarding the progress of developing the Narrows 2 Intake Extension. The reports since around 2008 indicate YCWA's intention to assess the intake extension during its P-2246 relicensing. The reports do not mention ongoing coordination with California DFW, USFWS or NMFS, as required by Revised Decision 1644. Further, Revised Decision 1644 does not require that YCWA "assess" the extension," but requires YCWA construct and operate the extension.

During P-2246 relicensing, YCWA relicensing Technical Memorandum 7-2 (YCWA 2013⁶³), which was included in YCWA's amended application, stated that:

The RMT (2010) concluded that implementation of the Yuba Accord provides a suitable thermal regime for target species in the lower Yuba River, and did not recommend water temperature-related operational or infrastructure modifications at that time.

On January 28, 2013, California DFW filed with FERC a letter⁶⁴ taking exception to the methods and conclusions in YCWA's Technical Memorandum 7-2.

In addition, the State Water Board took exception to YCWA's conclusion. At page 38 in its August 25, 2017, comments⁶⁵ in response to FERC's Ready for Environmental Analysis Notice for P-2246, the State Water Board stated that almost 15 years after Revised Decision 1644 was adopted:

YCWA remains obligated to pursue the [Narrows 2] Intake Extension Project under its water right permits. There remains reasonably foreseeable situations in which an intake structure at Narrows 2 would be necessary to meet temperature targets for listed species in the lower Yuba River.

Contrary to YCWA's repeated progress reports filed with the State Water Board claiming that the Narrows 2 Intake Extension would be assessed during the P-2246 relicensing, FERC's and

⁶² Yuba County Water Agency. 2013. Technical Memorandum 7-2, Potential Narrows 2 Powerhouse Intake Extension. Included in YCWA's 2017 Amended Application for New License.

⁶³ *Ibid.*

⁶⁴ California DFW's January 28, 2013, letter is available in FERC's ELibrary at accession number 20130128-5224.

⁶⁵ State Water Board's August 25, 2017, letter is available in FERC's ELibrary at accession number 20170825-5276.

USACE's 2019 FEIS does not assess - or even mention - the Narrows 2 Intake Extension Project required by the State Water Board's Decision 1644.

5.2.6 If FERC requires NID make additional P-2266 springtime flow releases in Dry and Critically Dry WYs, FERC should analyze the unintended consequences of the additional flow releases.

As described in Section 5.1.3, if, notwithstanding the above, FERC requires NID to release more water from P-2266 facilities, as compared to releases required in FERC's 2014 FEIS, in spring of Dry and Critically Dry WYs, the additional releases may have effects on aquatic and recreational resources upstream of Englebright Reservoir as well as on P-2266's generation and NID's water deliveries. FERC should weigh the benefits of such releases with the impacts to upstream resources, including water delivery and power generation, and P-2266 operation costs and potentially facility upgrades needed to make such releases. NID has not included herein such a detailed analysis because, at this time, no party has formally proposed such P-2266 additional releases, including volume and timing.

However, NID notes that if it were required to release an additional 15,600 acre-feet of water in April of Dry and Critically Dry WYs and assuming the requirement was in the Middle Yuba River, this would result in the following negative consequences:

Results of additional release from NID's P-2266 Middle Yuba River facilities of 15,600 acre-feet in April of Dry and Critically Dry WYs:

- **NID's P-2266:**
 - **36,938 acre-feet (30.0% reduction).** NID's average cumulative October 15 storage would be reduced from 52,538 (Table 4.5) to 36,938 acre-feet
 - **262 cfs average daily release in April (26 fold increase).** P-2266's Milton Diversion Dam average daily minimum flow requirement would increase from 10 to 6 cfs in April of Dry and Critically Dry WYs to 262 cfs (i.e., 262 cfs each day for 30 days equals 15,586 acre-feet)
 - **Very unnatural spring hydrograph.** P-2266 spring minimum flow requirements in Dry and Critically Dry WYs below Milton Diversion Dam would be 4 to 6 cfs in March (i.e., 2014 FEIS), 262 cfs in April, and 6 to 20 cfs in May (i.e., 2014 FEIS). These flow changes could have catastrophic effects on aquatic species, such as FYLF and rainbow trout, and possibly to recreation in the Middle Yuba River.
 - **No P-2266 diversions from January through June.** The additional 15,600 acre-feet exceeds the average 14,659 acre-feet of water that P-2266 would divert from the

Middle Yuba River to the South Yuba River from January through June in Dry and Critically Dry WYs (Table 6.6)

- **YCWA's P-2246:**

- **15,600 acre-feet (2.6% increase).** YCWA's average September 30 P-2246 and P-1403 storage would be increased from 593,107 acre-feet (Table 4.4) to 608,707 acre-feet
- **41,364 acre-feet (60.5% increase).** YCWA's additional storage due to NID's P-2266's relicensing would increase from 25,764 acre-feet (Table 4.4) to 41,364 acre-feet. YCWA could use this water to increase P-2246's and P-1403's benefits by power and water sales

Clearly, just based on storage, additional spring releases by P-2266 would result in a significant impact to NID's P-2266 (i.e., mid-October storage decrease of 30.0%) and a negligible benefit to YCWA's P-2246 (i.e., end of September gain in storage of 2.6%).

As mentioned above, if this or similar April additional releases, becomes a formal proposal, FERC will need to carefully assess potential effects in the Middle Yuba River.

5.2.7 If FERC requires NID make additional P-2266 flow releases in spring in Dry and Critically Dry WYs, NID should receive any benefits realized by the use of these flows in YCWA's P-2246.

As described in Section 5.1.5, notwithstanding the above, if FERC requires NID to release more water from P-2266 facilities, as compared to releases required in FERC 2014 FEIS, in spring in Dry and Critically Dry WYs, which would be a gift of water to YCWA, FERC should require that YCWA compensate NID for the additional releases and any impacts on NID's water deliveries.

5.3 Physical Modifications to P-2266

NID does not propose to make any modification to P-2266 facilities for the protection of ESA-listed fishes.

5.3.1 Modifications to P-2266 facilities are not needed because additional flow releases from P-2266 are not needed.

As described in Section 5.1.1, P-2266 as proposed in FERC's 2014 FEIS is not likely to adversely affect ESA-listed species from July through November in Dry and Critically Dry WYs. Therefore, modifications to P-2266 facilities are not appropriate or warranted.

5.3.2 Even if additional P-2266 flow releases are warranted, physical modifications to P-2266 facilities would not result in cooler water entering Englebright Reservoir from July through November in Dry and Critically Dry WYs. P-2266 releases reach equilibrium temperature well upstream of Englebright Reservoir.

NID's June 7, 2021, FERC AIR filing⁶⁶ examined changes in water temperatures in the Middle Yuba River and South Yuba River with increasing flow, specifically under the Baseline, FEIS, and FEIS + 55% UIF (YB) scenarios. The analyses are not repeated here but are included by reference. As a summary, NID's filing showed that in the Middle Yuba River, under even the FEIS + 55% UIF (YB) scenario for P-2266 releases, daily mean water temperature of inflows into YCWA's P-2246 Our House Diversion Dam impoundment exceed 68°F for most of the summer, with water temperatures as warm as 77°F in drier years.

NID's analyses showed similar results for the South Yuba River. P-2266's main storage reservoir in the South Yuba River, Bowman Lake, has very little storage. Under the Baseline, FEIS, and FEIS + 55% UIF (YB) scenarios, Bowman Lake's cold-water pool is depleted in Below Normal years and daily mean water temperature of inflow into Englebright Reservoir would be warmer than 68°F, and even 77°F in Above Normal WYs, from August through September.

5.3.3 If FERC requires NID make additional P-2266 flow releases in Dry and Critically Dry WYs, FERC should consider the cost of modifying P-2266 facilities to make such releases.

If FERC determines P-2266 should make additional flow releases in Dry and Critically Dry WYs, the timing and magnitude of such flows could require that NID modify P-2266 facilities. Such modifications would have associated costs and environmental consequences. FERC should include these costs and consequences in its analysis if it considers requiring P-2266 to make such additional releases in Dry and Critically Dry WYs. NID has not included such an analysis here because, at this time, no party has formally proposed such releases, including volume and timing.

6 NID's P-2266'S EFFECTS ON YCWA'S P-2246 AND P-1403

This section provides NID's reply to YCWA's contention that YCWA is harmed by P-2266 from July through November during drier years. In its March 8, 2021, AIR letter,⁶⁷ FERC characterizes this alleged harm as follows:

[YCWA] has been required to maintain a set of minimum instream flows in the Yuba River downstream of New Bullards Bar Dam, and as such, is required to compensate for the effect of other projects' water exports on streamflows during the January to June period. This limits YCWA's ability to store cooler water in New Bullards Bar Reservoir during the January to June period when New Bullards Bar Reservoir storage is below the flood pool (which sometimes happens during drier years). These upper basin

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

transfers restrict YCWA's ability to maintain cooler water in the river from July through November during drier years when water temperatures are more constraining for listed fish. It also constrains its capacity to generate hydroelectricity during the most valuable periods of the year.

6.1 YCWA Is Not Harmed

6.1.1 YCWA's has never supported its claim of harm or provided a compelling reason why it should be compensated, but has instead relied on loose innuendo.

A cornerstone of claiming harm is quantifying that harm occurs. However, YCWA has never quantified the amount of water it releases in addition to its required and discretionary releases to compensate for the effects of P-2266 on ESA-listed fishes in the lower Yuba River and, more importantly, YCWA has never described what P-2266 effects are on ESA-listed fishes in the lower Yuba River that would require YCWA make additional flow releases. Instead, YCWA has argued that P-2266 and P-2310 divert significant amounts of water so they must, of course, affect ESA-listed fishes in the lower Yuba River.

YCWA first puts forth this argument in its January 31, 2011, comments⁶⁸ on NID's and PG&E's draft license applications. In essence, in its letter YCWA's position was that P-2266's and P-2310's diversions and exports have "*a significant adverse impact*" on "*lower Yuba River flows and temperatures while expressly relying on the YRDP [P-2246] to mitigate these impacts*" and these effects are greatest in drier years when YCWA stated P-2266's and P-2310's diversions and exports are over 300,000 acre-feet. YCWA's evidence for impacts was based on its water balance modeling of two scenarios – baseline and baseline without P-2266 and P-2310. YCWA concludes that with the "*elimination of Y-B/D-S Project's diversions and exports, the [Lower Yuba River Accord] North Yuba Index would increase enough to change the applicable Yuba Accord flow schedule in 1978, 1988, 2001 and 2008.*", which YCWA stated would result in a different North Yuba Index schedules that would require P-2246 to make higher minimum flow releases into the lower Yuba River.

YCWA reiterated this position in its July 30, 2012, Motion to Intervene⁶⁹ adding that "*if YCWA's minimum flow requirements change in timing or increase in amount as a result of relicensing of the Yuba River Project [P-2246], then the Middle and South Yuba River diversions could exacerbate the impacts of the new requirements on YCWA's operations.*" YCWA provided no detailed evidence to support this proposition.

In Section 3.1.2.4 of Exhibit E in its June 2017 amended application for P-2246 (YCWA 2017⁷⁰), YCWA added more specificity to its estimate of P-2266's diversions stating that in Dry and Critically Dry WYs from WY 1990 through WY 2016, NID diverted from the Middle Yuba River sub-basin an average of 45,228 and 43,091 acre-feet, respectively. YCWA did not claim that P-2266 diverts any water from the South Yuba River during this period, but stated that PG&E's

⁶⁸ YCWA's January 31, 2011, letter is available in FERC's ELibrary at accession number 20110131-5228.

⁶⁹ YCWA's July 30, 2012, Motion to Intervene is available in FERC's ELibrary at accession number 20120730-5170.

⁷⁰ *Ibid.*

delivers to Placer County Water Agency (PCWA) and to NID from the South Yuba River sub-basin average 270,560 and 221,643 acre-feet in Dry and Critically Dry WYs, respectively.

YCWA reiterated again and slightly refocused its January 31, 2011, position in its October 16, 2020, amended comments⁷¹ on FERC's September 18, 2020, Biological Assessment.⁷² In its comments, YCWA took exception to FERC's conclusion that, while P-2266 and P-2310 may cumulatively affect flows in the lower Yuba River, the effects of those projects' exports on water temperature and aquatic habitat in the lower Yuba River are "negligible" given the relatively large volume of inflow to Englebright Reservoir from the North Yuba River and YCWA's operation of P-2246. YCWA opined that FERC's BA fails *"to address those exports' potential biological effects in the drier years that are most sensitive for listed fish in the lower Yuba River"* because *"the exports from the Yuba River watershed primarily occur within the January-June period when water temperature may be less of a constraining factor for listed fish than streamflows. YCWA, however, has been required to maintain minimum streamflows in the lower Yuba River and, therefore, has been required to compensate for the effect of the other projects' exports on streamflows during the January-June period."*

As shown above, while YCWA claimed in its filings that it is harmed, nowhere in any of its filings did YCWA explicitly quantify:

- P-2266's impacts alone on ESA-listed fishes in the lower Yuba River (i.e., YCWA had always combined P-2266 and P-2310, never focusing on P-2266 alone)
- The amount of water YCWA releases now, in addition to its otherwise required releases in its FERC license and water rights and YCWA discretionary releases on top of its required releases, to compensate for the effects of P-2266 on ESA-listed fishes in the lower Yuba River
- The amount of water YCWA would need to release under a P-2266 new license, in addition to its otherwise required releases in YCWA's P-2246 and P-1403 FERC licenses and water rights and YCWA discretionary releases on top of its required releases, to compensate for the effects of P-2266 on ESA-listed fishes in the lower Yuba River

Instead, YCWA's argument to support its position is a general inference that YCWA is due compensation from NID based on YCWA's *a priori* conclusion that P-2266 diversions must in some way affect ESA-listed fishes in the lower Yuba River. As discussed below, YCWA's claim of harm by NID is unsupported – YCWA is not harmed. Therefore, YCWA subsequent request for compensation from NID is spurious and an egregious attempt at a water grab. NID replies to YCWA's general arguments below.

⁷¹ YCWA's October 15 and 16, 2020, letters are available in FERC's ELibrary at accession numbers 20201015-5242 and 20201016-5130.

⁷² FERC's September 18, 2020, Biological Assessment is available in FERC's ELibrary at accession number 20200918-3022.

6.1.2 YCWA was well aware of P-2266’s operations and diversions when it proposed, designed and constructed P-2246. P-2266 had been diverting water for over 30 years.

YCWA acts as if it has only recently become aware of P-2266’s operations and upstream diversions. P-2266, and its associated water diversions pre-date P-2246 by many years, as shown in Table 6-1.

Table 6-1. Timing of P-2266 and P-2246 facilities.

Project	Facility in Yuba River Basin	Year Current Facility Placed in Service
P-2266	Milton Diversion Dam	1927
	Milton-Bowman Diversion Conduit	1927
	Bowman-Spaulding Diversion Dam	1928
	French Dam	1940’s
	Sawmill Dam	1941
	Jackson Dam	1942
	Faucherie Dam	1964
	Jackson Meadows Dam	1965
P-2246	Our House Diversion Dam	1968
	Log Cabin Diversion Dam	1968
	New Bullards Bar Reservoir	1969
	New Colgate Powerhouse Tunnel	1969

Source: Exhibit A in NID’s June 2012 P-2266 Application for New License and Exhibit A in YCWA’s June 2017 2029 P-2246 Amended Application for New License.

In fact, NID’s diversion of water from the Middle Yuba River, which is one of YCWA’s main complaints, began as early as 1927, well before P-2246 began operation and even before YCWA was formed in 1959. As early as 1927, NID’s upstream diversion system included Milton Diversion Dam that diverted high mountain water through the Milton-Bowman Diversion Conduit to Bowman Lake, which captured releases from French, Faucherie and Sawmill lakes. The water was then conveyed by the Bowman-Spaulding Conduit to PG&E’s Lake Spaulding where the water was diverted to meet NID’s water needs. (Section 6.8 in Exhibit E of NID’s June 2012 Application for New License.) YCWA’s undertook its project fully aware of NID’s longstanding operations. Its current claim of ‘harm’ from those longstanding and continuing operations falls flat.

6.1.3 In addition, the water rights NID exercises in its operation of P-2266 are senior to and take precedence over YCWA’s P-2246 junior water rights.

YCWA’s proposal to draw from sources of water previously appropriated by NID to address issues downstream of YCWA’s P-2246 and P-1403 would be inconsistent with California water law. First, YCWA’s proposal would violate the rule of water right priority, which is the central principle in California water law. Second, YCWA’s proposal seeks the right to use water that NID has previously stored or imported upstream and released for its own use; this would violate the basic premise that YCWA does not have a right to use or appropriate water that NID previously stored or imported by NID for use downstream.

As set forth in the tables below, NID’s water rights used in furtherance of P-2266 are prior in time and, therefore, prior in right, to those used by YCWA in furtherance of P-2246. Additionally,

many of NID's water rights contemplate storage and release and flows. Any water that NID has previously stored and released downstream for its beneficial use is not available to YCWA for diversion.

Table 6-2. NID's P-2266 water rights in the Yuba River basin.

License, Permit, Application or Statement No.	Source	Priority Date	Place of Storage or Diversion	Direct Diversion Amount (cfs)	Storage Amount (ac-ft)
S4716	Canyon Creek	1873	Sawmill Lake	Not Applicable (Pre-1914 Rights)	
S4717	Canyon Creek	1859	French Lake		
S13330	Middle Yuba River	1854	Milton Diversion Impoundment		
S13800	Canyon Creek	1872	Bowman Reservoir		
S13801	Canyon Creek	1872	Faucherie Lake		
S13927	South Yuba River	1874	PG&E's South Yuba Canal		
S13928	South Yuba River	1874	PG&E's Drum Canal		
S14356	Canyon Creek	1872	Bowman Reservoir		
S016092	Canyon Creek	1859	Jackson Lake		
12795 (7/10/1991)	Jackson Creek	5/7/1919	Jackson Lake	---	970 (1/1 – 12/31)
	Canyon Creek		Faucherie Lake	---	3980 (1/1 – 12/31)
	Canyon Creek		Sawmill Lake	---	1221 (1/1 – 12/31)
	Canyon Creek		Bowman Lake	---	58829 (1/1 – 12/31)
	Canyon Creek		Bowman-Spaulding Conduit	146 (4/15 – 9/30)	---
	Texas Creek		Bowman-Spaulding Conduit	30 (4/15 – 9/30)	---
	Fall Creek		Bowman-Spaulding Conduit	15 (4/15 – 9/30)	---
	Trap Creek		Bowman-Spaulding Conduit	5 (4/15 – 9/30)	---
12796 (7/10/1991)	Middle Yuba River	3/25/1921	Jackson Meadows and Bowman Reservoirs	---	60,000 (1/1 – 12/31)
12797 (7/10/1991)	Middle Yuba River	3/25/1921	Jackson Meadows and Bowman Reservoirs	---	60,000 (12/1 – 7/15)
12798 (7/10/1991)	Jackson Creek	6/3/1921	Jackson Lake	---	970 (12/1 – 7/15)
	Canyon Creek		Faucherie Lake	---	2,993 (12/1 – 7/15)
	Canyon Creek		Sawmill Lake	---	3,030 (12/1 – 7/15)
	Canyon Creek		Bowman Reservoir	---	47,530 (12/1 – 7/15)
	Canyon Creek		Bowman-Spaulding Conduit	152 (1/1 – 12/31)	---
	Texas Creek		Bowman-Spaulding Conduit	30 (1/1 – 12/31)	---
	Fall Creek		Bowman-Spaulding Conduit	15 (1/1 – 12/31)	---
	Trap Creek		Bowman-Spaulding Conduit	5 (1/1 – 12/31)	---
Permit No. 13770 (Lic. In Progress)	Middle Yuba River	9/8/1926	Jackson Meadows, Milton, Bowman, Scotts Flat, Rollins and Combie Reservoirs	---	50,000 (1/1 – 6/30, 10/1 – 12/1))
12799 (7/10/1991)	Clear Creek	6/16/1930	Bowman-Spaulding Conduit	5 (10/1 - 9/30)	---
	Fall Creek			10 (12/1 – 7/31)	---
	Trap Creek			5 (1/1 – 7/31)	---
12800 (7/10/1991)	Clear Creek	6/16/1930	Bowman-Spaulding Conduit	5 (4/15 – 9/30)	---
	Fall Creek			10 (4/15 – 7/31)	---
	Trap Creek			5 (4/15 – 7/31)	---
12802 (7/10/1991)	Texas Creek	11/27/1934	Bowman-Spaulding Conduit	68 (1/1 – 6/30)	---
	Clear Creek			13.6 (1/1 – 7/31)	---

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License, Permit, Application or Statement No.	Source	Priority Date	Place of Storage or Diversion	Direct Diversion Amount (cfs)	Storage Amount (ac-ft)
	Fall Creek			75.7 (12/1 – 7/31)	---
	Trap Creek			8.6 (4/15 – 6/30)	---
	Rucker Creek			25 (1/1 – 12/31)	---
12803 (7/10/1991)	Wilson Creek	11/27/1934	Milton-Bowman Conduit	3.5 (1/1 – 12/31)	---
			Bowman Reservoir	---	680 (11/1 – 6/30)
12801 (7/10/1991)	Wilson Creek	11/27/1934	Milton-Bowman Conduit and Bowman Lake	2.7 (1/1 – 12/31)	680 (11/1 – 6/30)
Permit No. 5815 (Lic. In Progress)	Clear Creek	11/27/1934	Bowman-Spaulding Conduit	30 (1/1 – 12/31)	6,000 (11/1 – 6/30)
	Texas Creek			70 (1/1 – 12/31)	14,000 (11/1 – 6/30)
	Fall Creek			85 (1/1 – 12/31)	17,000 (11/1 – 6/30)
	Trap Creek			15 (1/1 – 12/31)	3,000 (11/1 – 6/30)
	Rucker Creek			25 (1/1 – 12/31)	5,000 (11/1 – 6/30)
10016 (3/5/1973)	South Yuba River	9/3/1953	PG&E's Lake Spaulding	200 (9/1 – 6/30)	---
Permit No. 13772 (Lic. In Progress)	South Yuba River	3/6/1961	Rollins and Scotts Flat Reservoirs	200	18,000
Permit No. 13773 (Lic. In Progress)	Middle Yuba River	4/6/1961	Jackson Meadows and Bowman Reservoirs	---	50,000 (10/1 – 6/30)
Permit No. 19158 (Lic. In Progress)	Canyon Creek	10/22/1982	Bowman Reservoir	322 (1/1 – 12/31)	65,000 (1/1 – 7/31)

Source: Exhibit B in NID's June 2012 P-2266 Application for New License.

Table 6-3. YCWA's P-2246 water rights in the Yuba River basin.

Priority (date)	SWRCB Designation (application)	SWRCB Designation (license)	Source (waterbody)	Amount & Place of Diversion or Storage (amount & place)		Season (period)		Place of Beneficial Use (powerhouse)
2/11/1921	2197	435	North Yuba River	700 cfs at New Bullards Bar Dam		1/1 - 12/31		New Colgate Powerhouse
				5,000 ac-ft/yr at New Bullards Bar Dam		about 12/15 to about 7/15		
9/7/1922	3026	436	North Yuba River	10,000 ac-ft/yr at New Bullards Bar Dam		about 12/15 to about 7/15		New Colgate Powerhouse
4/30/1926	5004	777	North Yuba River	15,000 ac-ft/yr at New Bullards Bar Dam		about 12/15 to about 7/15		New Colgate Powerhouse
7/30/1927	5631	11565	Middle Yuba River	810 cfs at Our House Dam	490,000 ac- ft/yr storage in New Bullards Bar Res	1/1-12/31 (dir. div.)	10/15 to 6/30 (stor.)	New Colgate Powerhouse and Narrows 2 Powerhouse
			Oregon Creek	240 cfs at Log Cabin Dam		1/1-12/31 (dir. div.)		
			North Yuba River	1,800 cfs at New Bullards Bar Dam		11/1- 7/31 (dir. div.)		
			Yuba River	1,800 cfs at USACE's Englebright Dam		1/1- 12/31		
3/1/1939	9516	3050	North Yuba River	100 cfs at New Bullards Bar Dam		1/1 - 12/31		New Colgate Powerhouse
9/12/1941	10282	5544	North Yuba River	5,335 ac-ft/yr at New Bullards Bar Dam		about 10/1 to about 3/1		New Colgate Powerhouse
								Narrows 2 Powerhouse

Priority (date)	SWRCB Designation (application)	SWRCB Designation (license)	Source (waterbody)	Amount & Place of Diversion or Storage (amount & place)		Season (period)	Place of Beneficial Use (powerhouse)
2/20/1953	15205	11566	Middle Yuba River	3,200 ac-ft/yr at Log Cabin Dam; storage in New Bullards Bar Res.		5/1- 6/30	New Colgate Powerhouse and Narrows 2 Powerhouse
			North Yuba River	245 cfs and 700 ac-ft/yr at New Bullards Bar Dam		3/15- 6/15 (dir. div.); 5/1- 6/30 (stor.)	
			Yuba River	800 cfs at USACE's Englebright Dam		11/1-7/15	
10/2/1953	15563	11567	Middle Yuba River	30,000 ac-ft/yr at Our House Dam	all storage in New Bullards Bar Res.	10/15 - 6/30	New Colgate Powerhouse and Narrows 2 Powerhouse
			Oregon Creek	1,400 ac-ft/yr at Log Cabin Dam		10/15 - 6/30	
			North Yuba River	146,000 ac-ft/yr at New Bullards Bar Dam		10/15 - 6/30	
			Yuba River	910 cfs at USACE's Englebright Dam		11/1 - 6/30	

Source: Exhibit B in YCWA's June 2017 P-2246 Amended Application for New License.

Notwithstanding the important interests that FERC is evaluating through its AIR, there is no basis to ignore the rule of priority in allocating responsibility for fishery issues on the lower Yuba River. In California, even in the face of competing public interests in water, every effort must be made to preserve water right priorities. YCWA's proposal is completely at odds with this fundamental principle of California law.

Additionally, YCWA's flow demands on NID would be made to a large degree from quantities of water previously stored by NID in its upstream reservoirs. That water has already been appropriated by NID and cannot be considered available for subsequent appropriation by YCWA to address fishery impacts in the lower Yuba River.

6.1.4 Further, YCWA confirmed NID's senior rights in a November 13, 1961, Stipulation and that NID has a priority right to all water in the Middle Yuba River upstream of Milton Diversion Dam and in the South Yuba River upstream of Lang's Crossing.

YCWA's current operations are predicated, in part, on water rights acquired via assignment of State Water Applications 5631 and 5632, filed by the State of California in 1927. Those rights were subject to a pending NID application for assignment and release from priority to benefit current and future customers within NID's Territory in Nevada and Placer counties. To resolve the conflict between YCWA and NID concerning priority to beneficial use of the water subject to Applications 5631 and 5632, NID and YCWA entered into a Stipulation in 1961 that established relative water right priorities and reservations of water. A copy of the Stipulation is attached as Attachment E.

Any YCWA proposal to transfer water from P-2266 in response to the AIR request would violate the spirit and letter of the Stipulation. Material conditions in the Stipulation include the following:

- The Release of Priority of Applications 5631 and 5632 in favor of NID for numerous NID water rights and water right applications; and
- Reservations of water [from the assignment to YCWA] subject to Applications 5631 and 5632 required to supply NID's service territory, including:
 - All water in the Middle Fork of the Yuba River and its tributaries that originates above the existing Milton Diversion Dam of NID.
 - All water in the South Fork of the Yuba River and its tributaries that originates above Lang's Crossing.

NID and YCWA executed the Stipulation in 1961. Consistent with Section 7 of the Stipulation, its terms and conditions are incorporated in YCWA Water Right Permit Nos. 15026 and 15025.

NID's non-opposition to the assignment of Water Right Applications 5631 and 5632 was plainly predicated on the concept of 'no – injury' to NID. YCWA's proposal to require NID to release additional flows in the Middle Yuba River, the South Yuba River or both to benefit downstream impacts attributable to YCWA's P-2246 or P-1403 and to the detriment of water supply needs within NID's service territory is plainly inconsistent with the terms of the Stipulation, and is not an 'equitable allocation' of water necessary to address ESA issues in the lower Yuba River.

6.1.5 YCWA was fully aware of NID's longstanding upstream water operations and senior rights when it negotiated the Lower Yuba River Accord.

YCWA was also fully aware of P-2266's upstream diversions and senior water rights when it voluntarily entered into the Yuba Accord in 2008. The Accord is comprised of the following three components: 1) the Lower Yuba River Fisheries Agreement that specifies the Yuba Accord's Lower Yuba River minimum streamflows and creates a detailed fisheries monitoring and evaluation program; 2) the Water Purchase Agreement, under which DWR purchases water from YCWA for California Bay-Delta Program Environmental Water Account and State Water Project and Central Valley Project contractors; and 3) Conjunctive Use Agreements with seven of YCWA's member units, which specify the terms of the Yuba Accord's groundwater conjunctive-use program.⁷³ While YCWA did not request and FERC did not require in 2008 that FERC amend the flow requirements in the existing P-2246 license to match the flow requirements in the Lower Yuba River Fisheries Agreement, the State Water Board's Corrected Order Water Right 2008-0014 codifies the Yuba Accord flow requirements. Most of these flows were proposed by YCWA's to be included in its new P-2246 license. The Water Purchase and Conjunctive Use agreements expire on December 31, 2025.

YCWA was fully aware of P-2266's upstream diversions and operations and NID's senior water rights when it voluntarily entered into the Yuba Accord. Neither the Yuba Accord nor Corrected Order Water Right 2008-0014 includes any caveats that YCWA could only comply with the Yuba Accord flow schedule *if* it received compensation from the Upstream Projects. Nor did YCWA claim at the time that it voluntarily entered into the Yuba Accord that it was harmed in any manner

⁷³ The Yuba Accord included a fourth component, amendments to the 1966 Power Purchase Contract between YCWA and PG&E, that is no longer in effect.

by the Upstream Projects. YCWA voluntarily executed the Yuba Accord with its eyes wide open and has received the benefits from the Yuba Accord ever since.

6.1.6 Contrary to YCWA's inference, P-2266 is not likely to adversely affect ESA-listed fishes in the lower Yuba River from July through November in Dry and Critically Dry WYs. Therefore, compensation to YCWA is not needed.

As described in Section 5.1.1, P-2266 as proposed in FERC's 2014 FEIS is not likely to adversely affect ESA-listed species from July through November in Dry and Critically Dry WYs. YCWA has never put forth any specific and supported evidence that P-2266 effects ESA-listed fishes in the lower Yuba River let alone reliably describe the amount of water it claims it releases, in addition to its required release and its discretionary releases, to compensate for the supposed effects of P-2266 on ESA-listed fishes in the lower Yuba River.

6.1.7 P-2266 does not limit YCWA's ability to store water in New Bullards Bar Reservoir.

In its March 8, 2021, AIR letter, FERC postulates that P-2266's operations:

.. limits YCWA's ability to store cooler water in New Bullards Bar Reservoir during the January to June period when New Bullards Bar Reservoir storage is below the flood pool (which sometimes happens during drier years).

P-2266's operations in no way constrains or inhibits YCWA's ability to store water in New Bullards Bar Reservoir. There are no P-2266 facilities on the Middle Yuba River within 30 miles of YCWA's Our House Diversion Dam and there are no P-2266 facilities on the North Yuba River where New Bullards Bar Reservoir is located. Further, New Bullards Bar Reservoir storage is not constrained by flood control pool storage limitations in any Dry or Critically Dry WYs.

6.1.8 YCWA's claim that higher flows would occur in the lower Yuba River but for P-2266's upstream diversions is misleading and incorrect.

In its January 31, 2011, comments on NID's and PG&E's draft license applications, YCWA claimed that if P-2266 and P-2310 diverted no upstream water, flows would be higher in the lower Yuba River in 1978, 1988, 2001 and 2008 because more water would be stored in New Bullards Bar Reservoir, which would result in a change to the North Yuba Index (NYI) to a wetter flow schedule year. It is not credible for YCWA to assume that NID, which serves more than 25,000 domestic and irrigation customers, would forego diversions of its primary water supply, and by so devastate large swaths of Nevada and Placer Counties. A more reasonable analysis compares the Yuba Accord flow schedule under today's conditions (Scenario 1, All Baseline) and under the FEIS requirements (Scenario 2, All FEIS) in Dry and Critically Dry WYs.

As background, the Yuba Accord establishes flow schedules, as measured in the lower Yuba River at the Smartsville and Marysville gages under seven schedules that range from wet years (i.e., Schedule 1) through dry years (i.e., Conference Years). The schedule in effect at any particular

time is determined by the NYI that is a function of the amount of water in storage in New Bullards Bar Reservoir and DWR’s Bulletin 120 forecasted unimpaired flow at Smartsville.

Table 6-4 shows that the Yuba Accord flow schedule at the end of the year in Dry and Critically Dry WYs would be the same under Baseline and FEIS scenarios; that is, YCWA’s required releases would be the same regardless of NID’s P-2266’s releases – that is, the same amount of water as YCWA agreed to release when it executed the Yuba Accord.

Table 6-4. Yuba Accord NYI and flow schedule at the end of the water year in Dry and Critically Dry Water Years under Scenario 1, All Baseline, and Scenario 2, All FEIS.

Dry and Critically Dry Water Years ¹	Scenario 1, All Baseline		Scenario 2, All FEIS	
	North Yuba Index (NYI)	Yuba Accord Flow Schedule	North Yuba Index (NYI)	Yuba Accord Flow Schedule
1976	758	4	791	4
1977	447	Conference	442	Conference
1981	1,225	2	1,210	2
1985	1,379	2	1,350	2
1987	939	3	945	3
1988	760	5	789	5
1990	1,059	2	1,061	2
1991	1,144	2	1,140	2
1992	1,063	2	1,056	2
1994	989	3	977	3
2001	965	3	968	3
2007	1,166	2	1,147	2
2008	1,059	2	1,070	2

Source: Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

6.1.9 NID’s P-2266’s diversions from January through June in Critically Dr and Dry years are small in comparison to YCWA’s P-2246’s New Bullards Bar Reservoir storage.

YCWA focuses much of its arguments on the amount of water P-2266 diverts from January through June. In its October 16, 2020, letter, YCWA states that FERC’s September 18, 2020, Biological Assessment fails:

to address those exports’ potential biological effects in the drier years that are most sensitive for listed fish in the lower Yuba River” because “the exports from the Yuba River watershed primarily occur within the January-June period when water temperature may be less of a constraining factor for listed fish than streamflows. YCWA, however, has been required to maintain minimum streamflows in the lower Yuba River and, therefore, has been required to compensate for the effect of the other projects’ exports on streamflows during the January-June period.

YCWA’s argument does not survive close scrutiny. Tables 6-5 and 6-6 show the amounts diverted by NID’s P-2266 from the Middle Yuba River from January through June prior to the final determination of a Dry or Critically Dry WY in May under Scenario 1, All Baseline, and Scenario

2, All FEIS, respectively. NID's P-2266's facilities do not divert any water from the South Yuba River.

Table 6-5. Volume of water diverted by NID's P-2266 from the Middle Yuba River from January through June in Dry or Critically Dry WYs as determined by DWR's May Unimpaired Forecast under Scenario 1, All Baseline.

Dry and Critically Dry Water Years ¹	Monthly Volumes of Water Diverted by NID's P-2266 (acre-feet)						Total
	Jan	Feb	Mar	Apr	May	Jun	
1976	508	522	749	1,151	6,694	5,800	15,424
1977	391	389	447	777	6,321	2,558	10,883
1981	512	740	818	1,441	6,903	5,861	16,275
1985	535	513	731	3,425	7,960	3,856	17,020
1987	437	595	828	1,495	6,572	5,789	15,716
1988	564	603	978	1,362	6,525	5,906	15,938
1990	717	564	1,051	8,320	6,759	3,944	21,355
1991	415	414	1,081	1,214	7,412	5,038	15,574
1992	438	673	985	1,766	6,365	5,773	16,000
1994	466	456	909	1,358	6,919	5,843	15,951
2001	448	456	828	1,167	6,984	5,786	15,669
2007	555	838	1,155	3,551	7,474	5,079	18,652
2008	596	517	818	1,574	7,654	4,123	15,282
Average	506	560	875	2,200	6,965	5,027	16,133

Source: Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

Table 6-6. Volume of water diverted by NID's P-2266 from the Middle Yuba River from January through June in Dry or Critically Dry WYs as determined by DWR's May Unimpaired Forecast under Scenario 2, All FEIS.

Dry and Critically Dry Water Years ¹	Jan	Feb	Mar	Apr	May	Jun	Total
1976	797	620	1,032	1,839	5,634	5,006	14,928
1977	385	483	551	1,853	3,721	1,746	8,739
1981	799	733	1,094	1,911	5,124	4,775	14,436
1985	824	498	653	2,656	5,484	4,885	15,000
1987	1,283	711	1,101	1,991	5,376	4,998	15,460
1988	544	575	1,288	2,075	5,440	5,119	15,041
1990	1,003	652	1,327	6,683	5,244	4,735	19,644
1991	535	404	1,170	1,711	5,588	5,339	14,747
1992	543	756	1,274	2,140	4,695	4,676	14,084
1994	755	552	1,180	1,888	5,090	4,758	14,223
2001	737	555	1,084	1,676	5,199	4,688	13,939
2007	1,398	952	1,436	1,897	5,070	4,753	15,506
2008	701	498	763	1,924	5,985	4,974	14,845
Average	792	614	1,073	2,326	5,204	4,650	14,659

Source: Appendix B.

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

Table 6-5 shows that under Scenario 1, All Baseline, from January through June in Dry and Critically Dry WYs, NID diverts on average 16,133 acre-feet from the Middle Yuba River basin. Under Scenario 2, All FEIS, the diversion would reduce by 1,474 acre-feet to 14,659 acre-feet. This reduction in part, would result in additional water delivery shortages to NID county without producing any measurable benefits to ESA-listed fishes, as discussed in Section 4.2. As context:

Comparison of NID's January through June diversions in Dry and Critically Dry WYs to YCWA's storage in these years under Scenario 2, All FEIS:

- **14,659 acre-feet.** NID's P-2266's average total diversion
- **593,107 acre-feet.** YCWA's P-2246/P-1403's average total storage on September 30

6.1.10 YCWA's history of discretionary water transfers in Dry and Critically Dry WYs belies its claim that it needs more water from P-2266.

YCWA claims that P-2266's diversions put an undue burden on its P-2246's ability to meet its Yuba Accord flow commitments and generate power and YCWA's ability to provide water irrigation water downstream. However, as stated above, YCWA has provided no direct evidence to support this position and historical facts undercut YCWAs claim. For instance, Table 5.3.1 in Exhibit B of YCWA's Amended Application for P-2246 (YCWA 2017⁷⁴) shows YCWA's stored water transfers water sales from 1987 through 2016. Table 6-7 shows that YCWA made water sales in all but one of the Dry and Critically Dry WYs discussed in this filing, and that most of the water sales were in excess of 50,000 acre-feet. This does not suggest YCWA is short on New Bullards Bar Reservoir storage in dry years.

Table 6-7. YCWA stored water transfers water sales from in Dry and Critically Dry WYs.

Dry and Critically Dry Water Years ¹	Buyer	Stored Water Transfer to Buyer (acre-feet)	Annual Total (acre-feet)
1976 ²	--	--	--
1977 ²	--	--	--
1981 ²	--	--	--
1985 ²	--	--	--
1987	DWR	83,100	83,100
1988	DWR	135,000	135,000
1990	City of Napa	6,700	118,651
	East Bay Municipal Utility District	109,000	
	Tudor Mutual Water Company/Feather Water District	2,951	
1991	State Water Bank	99,200	99,200
	State Water Bank – CDFW	28,000	28,000
	City of Napa	7,500	7,500
1992	State Water Bank	30,000	30,000
1994	No water sale		
2001	Environmental Water Account	50,000	50,000
2007	Yuba Accord Water Purchase Participants	65,000	65,000
2008	Yuba Accord Water Purchase Participants	117,212	117,212

Source: Table 5.3.1 in Exhibit B of YCWA's Amended Application (YCWA 2017).

¹ Refer to Table 3-2 for a list of Dry and Critically Dry WYs.

² Table 5.3.1. in Exhibit B of YCWA's Amended Application does not include information for this year, which is a target year in NID's analysis.

6.1.11 FERC's FEIS and BA got it right. NID's P-2266 may cumulatively affect flows in the lower Yuba River but its effects on water temperature and aquatic habitat in the lower Yuba River are negligible.

FERC, in its 2014 FEIS and its September 18, 2020, Biological Assessment, concluded that, while NID's P-2266 may cumulatively affect flows in the lower Yuba River, the effects on water

⁷⁴ *Ibid.*

temperature and aquatic habitat are negligible given the relatively large volume of unaffected inflow to P-2246 and operation of P-2246. The FEIS stated:

While the Yuba-Bear, Upper Drum-Spaulding, Deer Creek, and Lower Drum Projects may have a cumulative effect on flows in the lower Yuba River, the direct effects of interbasin water transfer on water temperature and aquatic habitat are negligible given: (1) the effects of solar heating over the 41 miles of South Yuba River between Spaulding dam and Englebright reservoir and the nearly 45 miles of Middle Yuba River between Milton diversion dam and the confluence with North Yuba River; (2) the relatively large volume of inflow to Englebright reservoir from North Yuba River compared to the Middle and South Yuba Rivers; and (3) the relatively short distance (less than 2 miles) between the non-project New Colgate powerhouse and Englebright reservoir for the effects of ambient air temperatures and solar incidence to increase water temperatures associated with the discharge from the North Yuba River.

FERC's BA echoed that conclusion.

FERC's conclusion is correct. As shown in Figure 1-1, YCWA's P-2246 and P-1403 control the vastly overwhelming drainage area upstream of Englebright Dam - 908 square miles, or 82 percent of the total drainage - 14 times more area than NID's P-2266 that controls only 67 square miles, or 6 percent of the drainage. One could argue that the drainage area does not equal runoff. However, Tables 4-1 and 4-2 reinforce that YCWA controls most of the runoff to Englebright Reservoir from July through November in Dry and Critically Dry WYs. Under both Scenario 1, All Baseline, and Scenario 2, All FEIS, YCWA's P-2246 represents 92.5 and 88.5 percent, respectively, of the inflow into Englebright Reservoir as compared to P-2266 that would contribute only 0.8 and 3.0 percent, respectively, to the runoff at Englebright Dam.

6.1.12 YCWA provides no evidence to support its claim that P-2266 constrains YCWA's capacity to generate hydroelectricity during the most valuable periods of the year.

As with YCWA's unsupported claim that P-2266 requires YCWA to releases more water from its P-2246, YCWA has never provided any evidence that P-2266 constrains YCWA's P-2246 or P-1403 to generate hydroelectricity during the most valuable periods of the year. Nor is NID aware of any such evidence.

7 NID's RECOMMENDATIONS

For the reasons described above, NID does not propose that FERC require P-2266 to take any operational actions to protect ESA-listed fishes in the lower Yuba River. As described in Section 4, FERC's issuance to NID of a new P-2266 license consistent with the terms and conditions in FERC's 2014 FEIS is not likely to adversely affect ESA-listed species in the lower Yuba River from July through November in Dry and Critically Dry WYs. Therefore, requiring NID to release

additional flow from P-2266 would not be equitable (i.e., requiring mitigation commensurate with impacts). Further, operations of P-2266 and PG&E's P-2310 consistent with the terms and conditions in FERC's 2014 FEIS would result in the addition on average of 25,764 acre-feet of new storage in P-2246's New Bullards Bar Reservoir by September 1 in Dry and Critically Dry WYs as compared to Baseline conditions.

Similarly, NID does not propose that FERC require PG&E's P-2310 to take any operational actions to protect ESA-listed fishes in the lower Yuba River because FERC's issuance to PG&E of a new P-2310 license consistent with the terms and conditions in FERC's 2014 FEIS is not likely to adversely affect ESA-listed species in the lower Yuba River from July through November in Dry and Critically Dry WYs.

NID concludes that the best and proper alternative for protecting ESA-listed fishes in the lower Yuba River from July through November in Dry and Critically Dry WYs, if such additional protection is deemed needed, is to include in YCWA's P-2246 new license the following conditions, each of which by YCWA's own admission would provide cooler water in the lower Yuba River in summer of drier years:

- Continue to prioritize use of YCWA's P-1403's Narrows 1 Powerhouse over its P-2246's Narrows 2 Powerhouse. YCWA stated at the August 22, 2022, Consultation Meeting that it had already prioritized use of its P-1403 Narrows 1 Powerhouse over its P-2246's Narrows 2 Powerhouse because the Narrow 1 Powerhouse revenues were greater. Therefore, this would not be a change to Baseline conditions.
- Consistent with Condition 7 in the State Water Board's P-2246 WQC, YCWA prioritize use of its P-2246 New Colgate Powerhouse Tunnel upper intake from March 1 through May 31 and consult with the TRG to determine which New Colgate Power Tunnel Intake to use during the remainder of the year (see Section 5.2.3). At the August 22, 2022, Consultation Meeting, YCWA stated it planned to repair the Colgate Powerhouse Upper Intake, but not the associated shutters, during a planned outage around 2024. This would not be a change to the FEIS condition since the State Water Board's WQC will likely be included in a new license for P-2246. Further, this arguably would not be a change to Baseline conditions since under P-2246's existing license, the upper and lower intakes and shutter system are project works that should be maintained in good operating conditions. FERC could require these facilities operate now.
- Consistent with the State Water Board's Revised Decision 1644, YCWA add to its P-2246's Narrows 2 Powerhouse Intake a lower intake located deeper in Englebright Reservoir and, in consultation with the TRG, prioritize use of the lower intake of the upper intake later in summer and early fall in Dry and Critically Dry (see Section 5.2.5). This arguably would not be a change to Baseline conditions since the State Water Board has required YCWA to construct the intake extension since 2003, which YCWA has failed to do. NID notes that at the August 22, 2022, Consultation Meeting, YCWA discussed extending the intake of its P-1403 Narrows 1 Powerhouse Tunnel. NID has not recommended this here because FERC's AIR focuses on YCWA's P-2246, not YCWA's P-1403.

NID does not recommend that that FERC require additional flow releases from YCWA's P-2246 because NID believes the physical modification described above, which are already requirements of YCWA, would provide cooler water in the lower Yuba River in dry and critically dry years. However, if FERC determines that YCWA's P-2246 should release additional water from July through November in Dry and Critically Dry WYs, NID notes that YCWA has at least four options to do so without being harmed by NID's P-2266's operations. YCWA could:

- Utilize some of the existing storage in New Bullards Bar Reservoir, which YCWA otherwise releases now as discretionary, for additional releases from July through November in dry and critically dry years.
- Retain some of the New Bullards Bar Reservoir water YCWA currently releases for water sales before July and utilize that water for such additional releases from July through November in dry and critically dry years.
- Utilize some or all of the average of 25,764 acre-feet of additional new water that will be contributed by NID's P-2266 and PG&E's P-2310 to P-2246 storage in 2 conditions to YCWA's New Bullards Bar Reservoir in dry and critically dry years. .
- Utilize some or all of the average of 25,764 acre-feet of new storage in P-2246's New Bullards Bar Reservoir that would be provided in dry and critically dry years to make the additional releases, if required.

In any case, YCWA does not need additional water from P-2246. YCWA has never provided evidence that it releases water now, in addition to its otherwise required and discretionary releases, to compensate for the effects of P-2266 on the lower Yuba River or quantified such P-2266 effects.

8 List of Appendices

The following appendices are available on DVD upon request:

- Appendix A: Consultation Documentation
- Appendix B: Model Run Scenarios
- Appendix C: Exceedance Plots of River Miles of Suitable Habitat
- Appendix D: Average Number of River Miles of Suitable Water Temperatures by Month Under Scenario 1, All Baseline, and Scenario 2, All FEIS
- Appendix E: November 13, 1961, Stipulation

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