STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for the

PACIFIC GAS AND ELECTRIC COMPANY

UPPER NORTH FORK FEATHER HYDROELECTRIC PROJECT

FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2105

Sources: North Fork Feather River and Butt Creek

County: Plumas

DRAFT WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

Comments on the draft certification must be received by 5:00 pm on June 15, 2020.

Comments can be submitted by:

Email:
WR401Program@waterboards.ca.gov

or

Mail:
Mr. Jordan Smith
State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
P.O. Box 2000
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Table of Contents

List of Tables

Attachments:

1.0 Project Description

The Upper North Fork Feather River Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 2105, is located along the North Fork Feather River in Plumas County, and includes Lake Almanor, Butt Valley Reservoir, and Belden Forebay. The Project is owned and operated by Pacific Gas and Electric Company (PG&E) and its boundary encompasses approximately 31,105.7 acres. Over 96 percent of the of land in the Project boundary is owned by PG&E, with the remainder distributed between the United States Forest Service (577 acres in Lassen National Forest, 455 acres in Plumas National Forest) and Bureau of Land Management (38 acres). A small number of acres in the Project area are privately owned by parties other than PG&E.

The Project boundary encompasses a 19.6-mile reach of the North Fork Feather River and a four-mile reach of Butt Creek, a tributary to the North Fork Feather River. Belden Forebay separates the North Fork Feather River into two stream reaches in the Project boundary: the 10.8-mile Seneca Reach above Belden Forebay; and the 8.8-mile Belden Reach below Belden Forebay. Major Project components include Lake Almanor, Canyon Dam, Prattville Intake, Butt Valley Powerhouse, Butt Valley Reservoir, Butt Valley Dam, Caribou 1 and Caribou 2 Powerhouses, Belden Forebay, Oak Flat Powerhouse, and Belden Powerhouse. In addition, improvements to existing facilities and expansion of camping sites, access trails, boat launches, parking areas, and other recreational opportunities (e.g., whitewater boating) are proposed as part of the Project.

The Project location is shown in Figure 1 (Attachment A). Primary Project components are described in more detail in Attachment B. Numerous hydroelectric projects are located on the North Fork Feather River, which influence the flows and water quality of the of the North Fork Feather River. Figure 2 (Attachment A) displays the general locations of hydroelectric projects along the North Fork Feather River.

2.0 Federal Energy Regulatory Commission Proceedings

PG&E submitted a Notice of Intent to relicense the Project under FERC's Traditional Licensing Process (18 C.F.R. § 16.1 et seq.) on October 12, 1999. On October 22, 2002, PG&E filed its final license application for the Project with FERC. FERC issued a final Environmental Impact Statement (EIS) for the Project pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C § 4321 et seq.) on November 10, 2005.

2.1 Partial Settlement Agreement

In January 2001, PG&E entered into a collaborative stakeholder process, known as the 2105 Collaborative. The purpose of the 2105 Collaborative was to resolve issues and develop mutually acceptable protection, mitigation, and enhancement (PM&E) measures to be included in the new FERC license. The 2105 Collaborative resulted in the *Project 2105 Relicensing Settlement Agreement* (Settlement Agreement), signed on April 22, 2004, with the following parties: PG&E; United States Forest Service (Forest Service); California Department of Fish and Game (CDFG, since renamed California

Department of Fish and Wildlife (CDFW)); Plumas County; American Whitewater; California Sportfishing Protection Alliance; Anglers Committee; Chico Paddleheads; Shasta Paddlers; and Mountain Meadows Conservancy. State Water Resources Control Board (State Water Board) staff participated in the collaborative process to provide regulatory guidance, but the State Water Board was not a signatory to the resulting Settlement Agreement.

While the Settlement Agreement includes a wide range of PM&E measures, several items remained unresolved, including water temperature, new FERC license term, shoreline erosion, and wetland and riparian habitat offsite mitigation.

3.0 Regulatory Authority

3.1 Water Quality Certification and Related Authorities

The federal Clean Water Act (33 U.S.C. §§ 1251-1388) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the Clean Water Act (33 U.S.C. § 1251(g)) requires federal agencies to "co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act, including water quality standards promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs the agency responsible for certification to prescribe effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law. Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project. The State Water Board is the state agency responsible for such certification in California. (Wat. Code, § 13160.) The State Water Board has delegated authority to act on applications for certification to the Executive Director. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

Water Code section 13383 authorizes the State Water Board to "establish monitoring, inspection, entry, reporting, and recordkeeping requirements… and [require] other information as may be reasonably required" for activities subject to certification under section 401 of the Clean Water Act. For activities that involve the diversion of water for beneficial use, the State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029. In the *Redelegation of Authorities Pursuant to Resolution No. 2012-0029* memo issued by the Deputy Director on October 19, 2017, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights.

PG&E filed an application for water quality certification (certification) with the State Water Board under section 401 of the Clean Water Act on October 9, 2002. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on July 14, 2009. On March 4, 2020, the State Water Board denied PG&E's most recent application for certification without prejudice.

3.2 Water Rights

PG&E holds water rights to divert, store, and use water from the North Fork Feather River and its tributaries primarily for its hydroelectric projects, although some of PG&E's water rights authorize the use of water for consumptive purposes. PG&E holds licensed rights to divert water from French Creek for domestic use, industrial use, and fire protection at Caribou camp and from Oak Creek for domestic use and fire protection at Howells patrol station. PG&E also stores water in Lake Almanor and Butt Valley Reservoir and releases the water for irrigation in the Sacramento Valley under claimed pre-1914 appropriative rights. The Western Canal Water District uses water under these consumptive water rights pursuant to a 1986 contract, which provides that PG&E must release 145,000 acre-feet (AF) from storage in its reservoirs between March 1 and October 31 of each year for irrigation downstream of Lake Oroville.

The primary use of water diverted from the North Fork Feather River is power generation, although other agencies, companies, and the public also use the river for fire protection and domestic, industrial, and irrigation supply. The water bodies associated with the Project contribute to the water supply provided by Lake Oroville for the State Water Project. A summary of water rights held by PG&E for storage is included in Table A and diversion is included in Table B.

Table A. PG&E Storage Water Rights in Project Area[1]

Water Right No.	Type	Permit or License	Priority Date	Source	Storage (Acre-feet)	Use	Season
S000922	Pre-1914	--	1902	North Fork Feather	1,308,000[2]	Lake Almanor storage for power	Year round
A030257	Post-1914	Permit 021151	May 20, 1993	North Fork Feather	500,000	Lake Almanor storage for power	Oct 1 to Jun 30
S000923	Pre-1914	--	1902	Butt Valley Creek	49,897	Butt Valley Reservoir storage for power	Year round

[1] Based on PG&E owned water rights with a point of diversion in the Project area (as recorded in the State Water Board's electronic water rights information management system).

[2] Western Canal Water District exercises the Licensee's consumptive water right pursuant to a 1986 contract, which stipulates that 145,000 AF be released from storage between March 1 and October 31.

Table-B. PG&E Diversion Water Rights in Project Area[3]

Water Right No.	Type	Permit or License	Priority Date	Source	Diversion	Use	Season
S000933	Pre-1914	--	1913	North Fork Feather	2,000 cfs	Butt Valley PH	Year round
A030258	Post-1914	Permit 021152	May 20, 1993	North Fork Feather	1,000 cfs	Butt Valley PH and Caribou No. 2 PH	Nov 1 to Jun 30
A030415	Post-1914	Permit 021153	Dec 8, 1994	North Fork Feather	1,400 cfs	Butt Valley and Caribou No. 2 PH	Year round
S000931	Post-1914	--	1902	Butt Valley Creek	1,000 cfs	Caribou No. 2 PH	Year round
S000932	Riparian	--	1958	Butt Valley Creek	1,350 cfs	Caribou No. 1 PH	Year round
S011477	Riparian	--	1969	Butt Valley Creek	2,410 cfs	Belden PH	Year round
A009800	Post-1914	License 009871	Jan 1, 1940	North Fork Feather	2,465 cfs 2,896 cfs 3,500 cfs 3,500 cfs	Belden PH Rock Creek PH Cresta PH Poe PH	Year round

[3] Based on PG&E owned water rights with a point of diversion in the Project area (as recorded in the State Water Board Electronic Water Rights Information Management System).

Water Right No.	Type	Permit or License	Priority Date	Source	Diversion	Use	Season
A026780	Post-1914	Permit 020864	Apr 7, 1981	North Fork Feather	135 cfs 604 cfs 600 cfs 800 cfs	Belden PH Rock Creek PH Cresta PH Poe PH	Year round
A027570	Post-1914	License 013663	Nov 2, 1982	North Fork Feather	152.4 cfs	Oak Flat PH	Year round
A003794	Post-1914	License 000637	Jan 10, 1924	French Creek	0.5 cfs	Domestic, Industrial, and Fire Protection	year round
A003795	Post-1914	License 000809	Jan 10, 1924	Oak Creek	600 gpd	Domestic and Fire Protection	Year round
S000924	Pre-1914	--	1890	Butt Creek	10 cfs	Irrigation	Jun 1 to Oct 31

Table B Abbreviations: cfs = cubic feet per second; gpd = gallons per day; and PH = Powerhouse.

3.3 Water Quality Control Plans and Related Authorities

The California Regional Water Quality Control Boards (Regional Water Boards) have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to State Water Board and United States Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict. (Wat. Code, § 13170.) For a specified area, the water quality control plans designate the beneficial uses of water to be protected, water quality objectives established for the reasonable protection of those beneficial uses or the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Wat. Code, §§ 13241, 13050 subds. (h), (j).) The beneficial uses, together with the water quality objectives that are contained in the water quality control plans and state and federal anti-degradation requirements, constitute California's water quality standards under the federal Clean Water Act.

The Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) adopted, and the State Water Board and the USEPA approved, the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (SR/SJR Basin Plan) (Central Valley Regional Water Board 2018). The SR/SJR Basin Plan designates the beneficial uses of water to be protected along with the water quality objectives necessary to protect those uses. The existing beneficial uses for the North Fork Feather River identified in the SR/SJR Basin Plan include municipal and domestic supply, hydropower generation, contact recreation, canoeing and rafting, non-contact recreation, cold freshwater habitat, cold spawning habitat, and wildlife habitat. The existing beneficial uses for Lake Almanor identified in the SR/SJR Basin Plan include hydropower generation, contact recreation, warm and cold freshwater habitat, warm spawning habitat, and wildlife habitat.

The SR/SJR Basin Plan's water temperature objectives for the North Fork Feather River are:

1. At no time or place shall the temperature of intrastate waters be increased more than 5°F [2.8°C] above natural receiving water temperature; and

2. The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Central Valley Regional Water Board that such alteration does not adversely affect beneficial uses.

As specified in the SR/SJR Basin Plan, achievement of objectives depends on applying them to controllable water quality factors. Controllable water quality factors are defined as actions, conditions, or circumstances resulting from human activities that may influence water quality, that are subject to the authority of the State Water Board or Regional Water Boards, and that may be reasonably controlled.

3.4 Clean Water Act Section 303(d) Listing

In 2006, the State Water Board listed the North Fork Feather River, upstream of Lake Oroville, on the Clean Water Act Section 303(d) list of impaired water bodies. USEPA approved the 2006 303(d) list on June 28, 2007. The North Fork Feather River is impaired for temperature, meaning technology-based effluent limitations on point sources of pollution are inadequate to meet the SR/SJR Basin Plan's applicable water quality objectives for temperature. The State Water Board cited hydromodification and flow regulation/modification as potential sources of the impairment. (State Water Board Resolution No. 2006-0079.) The Project is a source of both hydromodification and flow regulation. Section 303(d) of the Clean Water Act requires total maximum daily loads (TMDLs) to be developed for impaired water bodies. TMDLs are written plans that define the maximum amount of a pollutant that a water body can receive without exceeding water quality standards and establish waste load allocations for point and nonpoint sources of pollution.

3.5 Construction General Permit

PG&E may need to obtain coverage under the *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit)[4] for activities that disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activity subject to the Construction General Permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

3.6 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

On April 2, 2019, the State Water Board adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures)[5]. The Procedures provide California's definition of wetland, wetland delineation procedures, and procedures for submitting applications for activities that could result in discharges of dredged or fill material to waters of the state. The Procedures ensure that State Water Board regulatory activities will result in no net loss of wetland quantity, quality, or permanence, compliant with Executive Order W-59-93. PG&E must comply with the Procedures when conducting dredge or fill activities that may impact waters of the state, including wetlands.

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[4] State Water Board Order No. 2009-0009-DWQ and National Pollutant Discharge Elimination System [NPDES] No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and any amendments thereto.

[5] The Office of Administrative Law approved the Procedures on August 28, 2019. The Procedures become effective on May 28, 2020.

4.0 California Environmental Quality Act Compliance

The State Water Board is lead agency for the Project for the purpose of the California Environmental Quality Act (CEQA). (Pub. Resources Code, § 21000 et seq.; Cal. Code Regs., tit. 14, § 15000 et seq.). FERC issued the Final Environmental Impact Statement (EIS) for the Project on November 10, 2005. The EIS analyzed the Project impacts pursuant to the National Environmental Policy Act (NEPA). Pursuant to CEQA, a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) was issued on August 30, 2005, and a scoping meeting was held in Chester, California on September 27, 2005. The State Water Board issued a Draft EIR for public review and comment on November 26, 2014. In response to comments received on the Draft EIR, the State Water Board revised and will release a Revised Draft EIR, concurrent with this draft certification, for public comment. This draft certification has been informed by the environmental information and analysis contained in the 2014 Draft EIR, public comments on the 2014 Draft EIR, the 2020 Revised Draft EIR, and other information in the record. The State Water Board may modify this certification as appropriate after the public comment period and completion of the environmental review under CEQA. The Executive Director's practice is to consider the Final EIR for the Project and make findings as required by section 15091 of the CEQA Guidelines before deciding whether and under what conditions to issue a final certification. (Cal. Code Regs., tit. 14, § 15091.)

Over the course of the license, circumstances may change, and PG&E may seek to make changes to the Project or Project operations that necessitate modifications to the conditions of this certification. Similarly, the State Water Board may require changes to the Project or Project operations pursuant to its reserved authority. Before approving or requiring any changes that may have a significant effect on the environment, the State Water Board will determine whether a subsequent EIR, or a supplement or addendum to the EIR, is required. (See Cal. Code Regs., tit. 14, §§ 15162, 15163 & 15164.)

The documents and other materials that constitute the public record are located at the State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California.

5.0 Rationale for Water Quality Certification Conditions

The certification conditions were developed to protect and enhance beneficial uses of California's waters and achieve compliance with associated water quality objectives[6]. Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) provides that the conditions contained in this certification be incorporated as mandatory conditions of the new license issued by FERC for the Project.

[6] Designated beneficial uses and associated water quality objectives for surface waters in the Project area are described in Section 3.2 of this certification, and in Chapters 2 and 3 of the SR/SJR Basin Plan.

When preparing the conditions in this certification, the State Water Board reviewed and considered the following information:

(i) The final license application submitted by PG&E to FERC, PG&E's application for certification, and any updates thereto;

(ii) Comments submitted by agencies and interested parties on the draft license application;

(iii) The Final EIS prepared pursuant to NEPA;

(iv) *Forest Service Final Section 4(e) Conditions, Upper North Fork Feather River Hydroelectric Project, FERC No. 2105*, dated November 4, 2004;

(v) *Recommendations of the California Department of Fish and Game Pursuant to Federal Power Act Section 10(j) for FERC Project No. 2105*;

(vi) State Water Board's CEQA documents;

(vii) Existing and potential beneficial uses and associated water quality objectives in the SR/SJR Basin Plan;

(viii) Project-related controllable water quality factors;

(ix) Settlement Agreement; and

(x) Other information in the record.

The following describes the rationale used to develop the conditions in this certification.

5.1 Rationale for Condition 1 – Minimum Instream Flows

Condition 1 contains water year specific minimum instream flow (MIF) requirements for specific Project reaches. The MIF requirements of this certification match those of the Settlement Agreement. The approach for developing MIF requirements focused on providing: higher flows during spring and early summer to correspond with expected unimpaired peak flows; environmental cues for aquatic and riparian organisms; habitat for aquatic species; cooler water temperatures; enhanced flows during spawning periods; and higher quality habitat for various life stages of resident fish populations.

The Settlement Agreement MIFs were developed in 2004 with the caveat that water temperature in the North Fork Feather River was an unresolved issue. In addition, the overall water quality of Lake Almanor and North Fork Feather River may be influenced by changing climate conditions over the length of the license. With the uncertainty concerning the adequacy of the Settlement Agreement MIFs, the MIF requirements will be evaluated and may need to be revised based on monitoring results and consultation between PG&E, the Forest Service, CDFW, United States Fish and Wildlife Service (USFWS), and State Water Board staff.

5.2 Rationale for Condition 2 – Ramping Rates

Condition 2 contains ramping rate requirements for specific Project reaches and Belden Powerhouse operations. Project operations can cause abrupt flow and stage fluctuations in Project affected reaches. These fluctuations and the rate at which they occur (i.e., ramping rate) may strand or otherwise impact aquatic species. The ramping rates will be evaluated and may need to be revised based on monitoring results and consultation between PG&E, the Forest Service, CDFW, USFWS, and State Water Board staff.

Condition 2 also requires PG&E to block load[7] the Belden Powerhouse during certain scenarios. Block loading Belden Powerhouse was listed in section 1.7 of Appendix A of the Settlement Agreement and in the settlement agreement for Rock Creek-Cresta Hydroelectric Project (FERC Project No. 1962). Block loading Belden Powerhouse is an operational measure PG&E uses to help meet the ramping rate requirements at PG&E's Rock Creek-Cresta Hydroelectric Project. Block loading Belden Powerhouse from March through June avoids the need to start and stop spills at Rock Creek Dam when flows below Rock Creek Dam are above the MIF requirements specified in the Rock Creek-Cresta Hydroelectric Project FERC license and below 3,000 cubic feet per second (cfs). At this time, Belden Powerhouse block loading is anticipated to be a continuing need, however, PG&E is currently revising the MIFs for the Rock Creek-Cresta Hydroelectric Project and developing long-term ramping rates for the Poe Hydroelectric Project (FERC Project No. 2107). Pending the outcome of these efforts, PG&E may not need to block load Belden Powerhouse. PG&E may request modification to the Belden Powerhouse block loading requirement if necessary.

5.3 Rationale for Condition 3 – Pulse Flows

Pulse flows aim to mimic seasonal high flow events that provide important biological cues and geomorphic processes. Absent high flow events, especially in Dry water years, Project-affected reaches can accumulate fine grained sediments and decrease the amount of available spawning habitat. Pulse flows and a more natural flow regime (Condition 1) will better support aquatic life by maintaining or improving aquatic habitat. Condition 3 requires the pulse flows identified in the Settlement Agreement, with additional pulse flows in March of Dry water years, consistent with the FERC staff recommendation. Additional pulse flows in March of Dry water years will help ensure periodic pulse flows occur with enough frequency.

5.4 Rationale for Condition 4 – Water Surface (Reservoir) Elevations

Project operations have the potential to impact beneficial uses of Lake Almanor, Butt Valley Reservoir, and Belden Forebay by reducing water surface elevations to generate electricity. The reservoir elevations required in Condition 4 are consistent with those in the Settlement Agreement. Water surface elevation requirements were designed to

[7] To block load a powerhouse is to operate the powerhouse to hold generation constant for a period of time.

meet ecological, cultural, aesthetic, social, economic, recreation, and Project operation needs.

5.5 Rationale for Condition 5 – Gaging and Facilities Modifications

Condition 5 requires PG&E to develop and implement a Gaging and Facilities Modification Plan in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The Gaging and Facilities Modification Plan requires information on existing gages used for the operation of the Project and compliance with this certification, as well as detailed descriptions and designs of facilities and gages that need to be constructed or modified, and measures that will be implemented to protect water quality and the beneficial uses.

5.6 Rationale for Condition 6 – Water Temperature Management

The goal of Condition 6 of this certification is to decrease water temperatures in the North Fork Feather River in order to provide reasonable protection of cold freshwater habitat, while protecting the water quality and biological integrity of the recreational fishery in Lake Almanor. Project operations cause or contribute to impairment of temperature in the North Fork Feather River. As noted above, water temperature was not addressed as part of the Settlement Agreement, and it identifies "water temperature" as one of the Table 2 "Subjects Not Resolved by this Settlement".

Condition 6 requires PG&E to release supplemental flows of up to 250 cfs from Canyon Dam. To inform this certification decision and for purposes of the CEQA analysis described above, the State Water Board has modeled the potential temperature control benefits and incidental environmental impacts of the MIFs and other PM&E measures proposed by PG&E (Proposed Project), as well as various temperature control measures, including: supplemental releases of up to 250 cfs from Canyon Dam from June 16 through September 15 and the installation of thermal curtains at the Prattville intake and in Butt Valley Reservoir (Alternative 1); and the installation of thermal curtains without supplemental releases from Canyon Dam (Alternative 2). To address comments received on the 2014 Draft EIR for the Project, the State Water Board completed supplemental modelling of stand-alone releases from Canyon Dam of 250 cfs from June 16 through September 15 (Alternative 3). The modeling uses hydrological and meteorological data from the 19-year period of 1984 through 2002. Results of the modeling of the stand-alone 250 cfs supplemental flows showed a decrease in occurrences when the water temperature of the North Fork Feather River exceeds 20°C in comparison to baseline conditions.[8]

As explained in more detail in the Revised Draft EIR, increased releases from Canyon Dam to provide MIFs could have impacts on water temperatures in Lake Almanor. Similarly, supplemental flows and/or the selective withdrawal of cold water from Lake Almanor to provide colder water in the North Fork Feather River could impact temperatures in Lake Almanor. According to the modeling, both the Proposed Project

[8] See Attachment E3 of the Revised Draft EIR, released May 2020.

and Alternatives 1, 2, and 3 could cause a decrease in suitable cold water habitat in the lake during the summer months of Dry and Critically Dry years, when suitable habitat is already limited. Among the alternatives, Alternatives 1 and 2 would be more effective at controlling temperatures in the North Fork Feather River than Alternative 3, but they would have a potentially greater impact on suitable habitat in Lake Almanor. Alternative 3 would be less effective at controlling river temperatures, but the modeled reductions in suitable habitat in the lake under this alternative would be less than Alternatives 1 and 2, as well as the Proposed Project.

Notwithstanding the modeling, it is uncertain whether the Proposed Project or any of the alternatives would adversely affect the fishery in Lake Almanor. The modeling also shows periods with little or no suitable habitat under baseline conditions, but no evidence exists of fish health issues or mortality under similar conditions in the past, possibly due to the existence of cold-water refugia in the lake (e.g., springs) that is not reflected in the modeling. Moreover, supplemental Canyon Dam releases can be adaptively managed to avoid or minimize potential impacts to cold-water habitat in Lake Almanor. Data collected as part of Condition 7 (Water Quality Monitoring) and Condition 8 (Lake Almanor Fish Monitoring) will be used to monitor and assess potential impacts to the cold water beneficial uses of Lake Almanor, which may identify the need to temporarily modify or suspend supplemental releases from Canyon Dam. Condition 6(B) provides a framework for this supplemental flow modification.

Similarly, to protect the cold water beneficial uses of the North Fork Feather River, Condition 6(C) requires PG&E to develop fishery performance objectives to determine the effectiveness of the supplemental flows. In addition, Condition 6(D) outlines the process for developing a contingency plan (e.g., additional supplemental flows, thermal curtain, etc.) if the supplemental flows are found to be ineffective for reasonably protecting the cold water beneficial uses of the North Fork Feather River.

5.7 Rationale for Condition 7 – Water Quality Monitoring

Project operations have the potential to affect reservoir and stream water quality within and outside the Project area. To protect water quality and the beneficial uses of waters described in the SR/SJR Basin Plan, Condition 7 requires water quality monitoring in Project stream reaches and reservoirs. Condition 7 requires PG&E to develop and implement a Water Quality Monitoring Plan in consultation with the Forest Service, CDFW, USFWS, Plumas County, Central Valley Regional Water Board, and State Water Board staff. Information gathered from implementation of the Water Quality Monitoring Plan will be used to evaluate the effects of Project-related actions on water quality, and to identify, assess, and adaptively manage potential Project-related adverse water quality impacts.

5.8 Rationale for Condition 8 – Lake Almanor Fish Monitoring

Condition 8 requires fishery monitoring in Lake Almanor. Management of the Lake Almanor cold water pool for the protection of the cold freshwater habitat beneficial use

as well as recreational beneficial uses requires an understanding of fish population composition, fish condition, and changes in angler satisfaction.

PG&E is required to develop, in consultation with the Forest Service, Plumas County, CDFW, USFWS, and State Water Board staff, a plan to monitor Lake Almanor fish populations, fish condition, and angler satisfaction.

5.9 Rationale for Condition 9 – Gravel

Pulse flows of various magnitudes are designed to restore flow heterogeneity, mobilize and distribute gravel, and better balance ecological and water supply needs. Gravel monitoring is needed in the Seneca Reach and Belden Reach to assess sediment mobility as a result of the pulse flows. Condition 9 requires PG&E to develop and implement a Gravel Plan in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff.

5.10 Rationale for Condition 10 – Lower Butt Creek Habitat

Relicensing parties acknowledged that the continued impoundment of water at Butt Valley Reservoir for hydropower generation impacts Lower Butt Creek by decreasing the water for biological resources and by potentially decreasing available spawning gravel that may have otherwise transported downstream past Butt Valley Dam. The relicensing parties also recognized that the information collected during relicensing was insufficient to determine the degree that the Project may be negatively affecting Lower Butt Creek.

Condition 10 requires PG&E to develop, in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff, a plan to monitor and assess aquatic habitat quality in Lower Butt Creek. The evaluation will be used to determine if pulse flows below Butt Valley Reservoir or other actions are necessary to recruit and distribute spawning sized gravel.

5.11 Rationale for Condition 11 – North Fork Feather River Biological Resources Monitoring

New and continued Project operations have the potential to cause changes to fish populations, special-status amphibians, and benthic macroinvertebrate (BMI) assemblages in Project-affected stream reaches. Biological monitoring can detect these changes, identify additional information needs, and guide adaptive management of Project operations. Condition 11 requires PG&E to develop and implement a Biological Resources Monitoring Plan in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The Biological Resources Monitoring Plan will outline monitoring requirements for fish, special-status amphibians, and BMI to ensure that Project operations do not negatively impact water quality and the beneficial uses of the North Fork Feather River.

5.12 Rationale for Condition 12 – Fish Stocking

The impoundment of water for power generation at Lake Almanor provides quality recreational fishing opportunities for the region. CDFW has a long history of developing and maintaining the popular reservoir fishery at Lake Almanor. As agreed upon in section 7.5 of Appendix A to the Settlement Agreement, PG&E will continue to provide funding to CDFW for its stocking program in the Belden Reach and make funds available to augment CDFW's existing Lake Almanor fisheries program. Condition 12 requires PG&E to enter into an agreement with CDFW to continue to support fish stocking of Lake Almanor and the Belden Reach and any additional Lake Almanor fish stocking determined to be necessary under Condition 8 (Lake Almanor Fishery Monitoring).

5.13 Rationale for Condition 13 – Recreation Facilities Management

The Project includes several new and rehabilitated recreational features as a result of portions of the Settlement Agreement and Forest Service section 4(e) conditions. Details concerning these improvements require further development, including specific Project designs, construction schedules, implementation of measures to protect water quality, water quality monitoring, agency consultation, and reporting.

Condition 13 requires PG&E to develop and implement a Recreation Facilities Management Plan in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The Recreation Facilities Management Plan will include:
(1) measures to protect water quality during construction; (2) monitoring; and
(3) schedules to implement the proposed improvements and new recreation facilities.

5.14 Rationale for Condition 14 – Whitewater Recreation Flows

The North Fork Feather River offers a regionally unique and stunning backdrop of deeply incised canyon walls for potential recreationalists. Regulation of instream flows by the Project affects the quantity, quality, and availability of whitewater recreation opportunities in the Belden Reach.

Condition 14 requires PG&E to develop and implement a Whitewater Recreation Flow Plan (Whitewater Plan) in consultation with the Forest Service, CDFW, USFWS, American Whitewater, Plumas County, and State Water Board staff. The Whitewater Plan will require PG&E to develop and implement whitewater recreation flows. Additionally, the Whitewater Plan will allow PG&E to propose situations in which it may be excused from providing whitewater recreation flows.

5.15 Rationale for Condition 15 – Aquatic Invasive Species

Recreational boating opportunities at Project reservoirs have the potential to cause the proliferation of aquatic invasive species. Visitors from different areas provide the potential for a large number of aquatic invasive species to colonize Project-affected waters and potentially impact beneficial uses. If not properly managed, the use of contact recreational equipment can introduce aquatic invasive species that can

deleteriously affect water quality, outcompete native fauna and flora, and degrade Project infrastructure.

Condition 15 requires PG&E to develop a Project-specific aquatic invasive species plan that includes a public education program for Project recreation facilities. The plan also must include monitoring for early detection of aquatic invasive species vectors to minimize the risk of aquatic invasive species becoming established in Project waters.

5.16 Rationale for Condition 16 – Roads

Operations and maintenance of Project roads have the potential to impact water quality. The potential for water quality impacts depends on factors such as local topography, roadbed material, and drainage characteristics. To avoid and minimize these potential water quality impacts, Condition 16 requires PG&E to develop and implement a Road Management Plan. Condition 16 will help ensure Project roads do not cause discharges that violate water quality standards.

5.17 Rationale for Condition 17 – Reintroduction of Anadromous Fish

It is possible that anadromous fish will be reintroduced into Project-affected stream reaches during the term of the new FERC license. Negotiations between PG&E, Department of Water Resources, and other stakeholders have been underway since 2005. Implementation of the Feather River Habitat Expansion Agreement (HEA) is dependent on issuance of new FERC licenses for the Oroville Facilities Hydroelectric Project (FERC Project No. 2100), Poe Hydroelectric Project (FERC Project No. 2107), and this Project. To date, a new FERC license has only been issued for the Poe Hydroelectric Project. By letter dated December 12, 2005, the National Marine Fisheries Service has reserved authority to condition fish passage for the Project.

Condition 17 is intended to facilitate consultation between PG&E, the State Water Board, and resource agencies with jurisdiction over such a reintroduction, in order to determine whether additional measures are necessary to enable reintroduction. It is expected that early consultation would result in a smoother reintroduction process, which will aid in the protection of beneficial uses associated with anadromous fish (e.g., cold spawning habitat).

5.18 Rationale for Condition 18 – Annual Consultation Meetings

Monitoring plans and studies required by this certification will help resource agencies and State Water Board staff to evaluate benefits and impacts associated with the implementation of new license conditions to hydrological, biological, and geomorphological resources in the Project area throughout the term of the license and any extensions. Annual consultation meetings bring resource agencies and interested parties together to discuss monitoring results and resource trends, and develop adaptive management actions, if necessary, to protect water quality and beneficial uses. Condition 18 requires PG&E to conduct annual consultation meetings with resource agencies and other interested parties to review monitoring reports and discuss ongoing

and forecasted operations, including revisions or modifications to monitoring and/or operations that may be needed to protect water quality and beneficial uses.

5.19 Rationale for Condition 19 – Extremely Dry Conditions

California's history of drought illustrates the importance of planning for multiple dry years or drought. It is difficult to anticipate the specific impacts of consecutive dry years, or a long-term drought, and identify where limited water supplies may be best used during times of shortage. Condition 19 provides the opportunity, following consultation with State Water Board staff, participating agencies, and notice to interested parties, for PG&E to submit and request Deputy Director approval of a Revised Operations Plan to address water shortage issues during consecutive Dry or Critically Dry water year types or drought years. This condition provides flexibility for adaptive management during times of extreme water shortage.

5.20 Rationale for Condition 20 – Grebes Management

Grebes are known for their late summer mating rituals, which are celebrated at Lake Almanor during the annual Lake Almanor Grebes Festival in the town of Chester. Reports indicate that over the past decade lower water surface elevations at Lake Almanor during nesting periods has resulted in Grebe nest abandonment and declining reproductive success rates.

Condition 20 requires PG&E to develop and implement a Grebes Management Plan in consultation with the CDFW, USFWS, Plumas Audubon Society, and State Water Board staff. The Grebes Management Plan will require PG&E to identify any adverse Project impacts on Grebe nesting, and propose and implement reasonable measures to avoid or reduce identified adverse impacts.

5.21 Rationale for Conditions 21– 43

In order to ensure that the Project operates to meet water quality standards as anticipated, to ensure compliance with other relevant state and federal laws, and to ensure that the Project will continue to meet state water quality standards and other appropriate requirements of state law over their lifetime, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all certifications, which are included in this certification.

6.0 Conclusion

The State Water Board finds that, with the conditions and limitations imposed under this certification, the Project will be protective of state water quality standards and other appropriate requirements of state law.

7.0 Water Quality Certification Conditions

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES that operation of the Upper North Fork Feather River Hydroelectric Project (FERC Project No. 2105) will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if the Pacific Gas and Electric Company complies with the following terms and conditions.

CONDITION 1. Minimum Instream Flows

1(A) Water Year Types

The Licensee shall determine the water year type based on the forecast of unimpaired runoff as provided by the California Department of Water Resources (DWR) Bulletin 120[9] for the Feather River at Lake Oroville. The water year types are defined in accordance with Table 1 and associated information in this condition.

Table 1. Water-Year Types

Water Year Type	Forecasted Unimpaired Runoff (thousand acre-feet (TAF))
Wet	Greater than or equal to 5,679 TAF
Normal	Less than 5,679 TAF, but greater than or equal to 3,228 TAF
Dry	Less than 3,228 TAF, but greater than or equal to 2,505 TAF
Critically Dry	Less than 2,505 TAF

In February, March, April, and May the Licensee shall, within five days of DWR's release of Bulletin 120, determine the water year type based on the DWR Bulletin 120 forecast and shall operate based on that forecast. The May forecast shall be used to establish the water year type for the remaining months until February of the subsequent year, when forecasting shall begin again. Within 15 days of each water year type determination, the Licensee shall provide written notice of the determination to State Water Resources Control Board (State Water Board) staff.

1(B) Minimum Instream Flows

Within 60 days of license issuance, the Licensee shall operate according to the minimum instream flows (MIFs) outlined in Table 2 and Table 3. The MIFs listed in

[9] Bulletin 120 is a publication issued four times a year, in the second week of February, March, April, and May by DWR. It contains forecasts of the volume of seasonal runoff from California's major watersheds, and summaries of precipitation, snowpack, reservoir storage, and runoff in various regions of California.

Table 2 and Table 3 shall be measured at Gage NF-2 (United States Geological Survey (USGS) Gage No. 11399500) and Gage NF-70 (USGS Gage No. 11401112), respectively.

Table 2. Minimum Instream Flow Requirements (in cubic feet per second) for North Fork Feather River Flows Below Canyon Dam as measured at Gage NF-2, USGS Gage No. 11399500

Water Year Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wet	90	100	125	150	150	150	95	80	60	60	60	75
Normal	90	100	125	125	125	125	90	80	60	60	60	75
Dry	90	100	110	110	110	110	80	70	60	60	60	75
Critically Dry	75	75	90	90	90	80	75	60	60	60	60	70

Table 3. Minimum Instream Flow Requirements (in cubic feet per second) for North Fork Feather River Flows Below Belden Dam as measured at Gage NF-70, USGS Gage No. 11401112

Water Year Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wet	140	140	180	235	235	225	175	140	140	120	120	120
Normal	140	140	175	225	225	225	175	140	140	120	120	120
Dry	135	140	175	195	195	160	130	110	100	100	110	115
Critically Dry	105	130	170	180	185	90	80	75	75	75	85	90

1(C) Minimum Instream Flow Measurement and Dissemination

MIFs for the North Fork Feather River shall be measured in two ways: (1) as a 24-hour average flow; and (2) as an instantaneous flow. The 24-hour average flow is the average of the instantaneous (15-minute) flow readings from midnight of one day to midnight of the following day, unless an alternate 24-hour timeframe is approved by the Deputy Director of the Division of Water Rights (Deputy Director) in writing. The Licensee shall record instantaneous (15-minute) streamflow at all gages consistent with USGS standards. The instantaneous streamflow shall be at least 90 percent of the MIFs specified in Table 2 and Table 3, provided the instantaneous average flows over a 24-hour period are equal to or greater than the MIFs required in Table 2 and Table 3.

For the purpose of measuring streamflows on the North Fork Feather River below Canyon Dam and Belden Dam, the Licensee shall operate and maintain the gages consistent with Condition 5 (Gaging and Facilities Modifications).

The Licensee shall measure and document all MIF releases and associated stream flows, as measured at the gages required per this certification, in a publicly available and readily accessible format. The Licensee shall publicly notice on the internet all known events that will affect MIF releases (e.g., powerhouse outages, construction, etc.) in Project reaches a minimum of 30 days in advance.

1(D) Powerhouse Outages

The Licensee shall schedule maintenance or other planned powerhouse outages in a way that avoids negative ecological impacts associated with the outage (e.g., spills). The Licensee shall provide written notification to the California Department of Fish and Wildlife (CDFW), United States Fish and Wildlife Service (USFWS), and the Deputy Director at least 90 days prior to any planned or scheduled powerhouse outages that would affect stream flow in the North Fork Feather River. At a minimum, notification shall include a description of the outage and measures the Licensee will implement to minimize the magnitude and duration of spills into the Project reach. The Licensee may proceed with the planned powerhouse outage unless otherwise directed, in writing, by the Deputy Director. The Licensee shall provide public notice of the outage in accordance with Condition 1(C).

1(E) Planned Temporary Flow Modifications

The Licensee may request temporary MIF variances for non-emergency facility construction, modification, or maintenance. Non-emergency variance requests shall be submitted to the Deputy Director for approval as far in advance as practicable, but no less than four months in advance of the desired effective date. The Licensee shall notify the United States Forest Service (Forest Service), CDFW, and USFWS of the proposed temporary MIF variance. The request shall include: a description of the proposed construction, modification, or maintenance; the planned duration and magnitude of the MIF variance; documentation of notification to the Forest Service, CDFW, and USFWS, and any comments received; measures that will be implemented to protect water quality and beneficial uses; and a schedule for the proposed construction, modification, or maintenance. The Deputy Director may deny the request or require modifications as part of any approval. Upon Deputy Director approval, the Licensee shall provide public notice of the MIF variance in accordance with Condition 1(C). The Licensee shall file with the Federal Energy Regulatory Commission (FERC) the Deputy Director-approved temporary modifications to MIF requirements and any approved amendments thereto.

1(F) Unplanned Temporary Flow Modifications

The MIFs specified in Condition 1(B) may be temporarily modified if required by equipment malfunction reasonably beyond the control of the Licensee, as directed by law enforcement authorities, or in emergencies. An emergency is defined as an unforeseen event that is reasonably out of the control of the Licensee and requires the Licensee to take immediate action, either unilaterally or under instruction by law enforcement or other regulatory agency staff, to prevent imminent loss of human life or

substantial property damage. An emergency may include, but is not limited to: natural events such as landslides, storms, or wildfires; malfunction or failure of Project works;[10] and recreation accidents. Drought is not considered an emergency for purposes of this condition.

When possible, the Licensee shall notify the Deputy Director prior to any unplanned temporary MIF modification. In all instances, the Licensee shall notify the Deputy Director within 24 hours of the beginning of any unplanned temporary streamflow modification. Within 96 hours of the beginning of any unplanned temporary stream flow modification, the Licensee shall provide the Deputy Director with an update of the conditions associated with the modification and an estimated timeline for returning to the required MIFs.

Within 30 days of any unplanned temporary MIF modification, the Licensee shall provide the Deputy Director with: (1) a written description of the modification and reason(s) for its necessity; (2) photo documentation of the emergency or reason for the stream flow modification; (3) a timeline for returning to the required MIF or timeline when the MIF resumed; (4) a description of corrective actions taken in response to an unplanned under-release of flow; and (5) a plan to prevent the need for modification of MIFs resulting from a similar emergency or event in the future.

1(G) Evaluation of MIFs

After considering monitoring results from Condition 7 (Water Quality Monitoring) and Condition 11 (North Fork Feather River Biological Resources Monitoring), or following recommendation(s) by one for more resource agency or State Water Board staff, the Deputy Director may require the Licensee to initiate consultation with the Forest Service, CDFW, USFWS, and State Water Board staff to determine whether the required MIFs are protecting water quality and beneficial uses, and determine what, if any, adjustments are necessary.

Within six months of initiating consultation, the Licensee shall submit to the Deputy Director: documentation of consultation; any changes to the MIFs proposed by the Licensee; the consulting agencies' comments and recommendations; and a description of how any changes proposed by the Licensee incorporate or address the comments and recommendations. Based on the monitoring results and other relevant information, the Deputy Director may approve the Licensee's proposal or require other changes to the MIFs specified in Condition 1(B) to the extent necessary to ensure reasonable

[10] Project works must be inspected and maintained to manufacturers' specified schedule or at least annually. The inspection schedule default is the most rigorous schedule. Upon State Water Board staff, Forest Service, CDFW, or USFWS' request, the Licensee shall provide documentation of: all inspections, results, dates, staff performing inspections, and recommended maintenance; schedule for performing maintenance; and the date maintenance was performed. Lack of appropriate inspections, maintenance, or documentation may remove events from the "emergency" category, as determined by the Deputy Director.

protection of the beneficial uses of the North Fork Feather River. If changes to the MIFs are required, within 10 days of the Deputy Director's approval of the Licensee's proposal or changes to the MIFs, the Licensee shall file a request with FERC to amend the MIF requirements in the license. The Licensee shall implement the new MIFs as soon as reasonably practicable after receiving the Deputy Director's decision and any other required approvals.

CONDITION 2. Ramping Rates

2(A) Ramping Rates

The Licensee shall limit stage changes in the North Fork Feather River below Canyon Dam and below Belden Dam to no more than 0.5 foot/hour up and down year-round. Compliance for this requirement shall be measured at Gage NF-2 below Canyon Dam and Gage NF-70 below Belden Dam. The Licensee shall implement the ramping rates within 60 days of license issuance.

Ramping rates are required year-round when flows are controllable at Project impoundments and are applicable to other flow requirements, including Pulse Flows (Condition 3), Water Temperature Management (Condition 6), and Whitewater Recreation Flows (Condition 14).

2(B) Evaluation of Ramping Rates

After considering monitoring results from Condition 7 (Water Quality Monitoring) and Condition 11 (North Fork Feather River Biological Resources Monitoring), or following recommendation(s) by one or more resource agency or State Water Board staff, the Deputy Director may require the Licensee to initiate consultation with the Forest Service, CDFW, USFWS, and State Water Board staff to determine if the required ramping rates are protecting water quality and beneficial uses, and determine what, if any, adjustments are necessary.

Within six months of initiating consultation, the Licensee shall submit to the Deputy Director: documentation of consultation; any changes to ramping rates proposed by the Licensee; the consulting agencies' comments and recommendations; and a description of how any changes proposed by the Licensee incorporate or address the comments and recommendations. Based on the monitoring results and any other relevant information, the Deputy Director may approve the Licensee's proposal or require other modifications to the ramping rates specified in Condition 2(A) to the extent necessary to ensure reasonable protection of the beneficial uses of the North Fork Feather River. If changes to the ramping rates are required, within 10 days of the Deputy Director's decision the Licensee shall file with FERC a request to amend the FERC license for implementation of the modified ramping rates. The Licensee shall implement the new ramping rates as soon as reasonably practicable after receiving the Deputy Director's decision and any other required approvals.

2(C) Belden Powerhouse Block Loading

From March 1 to July 1, the Licensee shall block load Belden Powerhouse when the Rock Creek Dam is spilling water and the flows below Rock Creek Dam are in excess of the minimum stream flow specified in the Rock Creek-Cresta Hydroelectric Project (FERC Project No. 1962) FERC license and less than 3,000 cfs (as measured at Gage NF-57, which is also known as USGS Gage No. 11403200).

The Licensee may request modification of the Belden Powerhouse block loading operations following consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. If changes to block loading operation are desired, the Licensee shall submit the proposed revisions to Belden Powerhouse block loading operations to the Deputy Director for review and approval. At a minimum the block loading change proposal shall include: a description of the proposed changes to block loading and related Belden Powerhouse operations; information supporting the proposed changes to block loading; and documentation of consultation, including the comments and recommendations made in connection with the proposal, and a description of how the proposal incorporates or addresses the comments and recommendations. The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved revisions to Belden Powerhouse block loading operations. The Licensee shall implement the revised Belden Powerhouse operations upon receipt of Deputy Director and any other required approvals.

2(D) Unplanned Temporary Ramping Rate Modifications

A temporary variance from ramping rate and Belden Powerhouse block loading requirements may be granted if required by equipment malfunction beyond the reasonable control of the Licensee, as directed by law enforcement authorities or in emergencies.

Within 96 hours of the beginning of any unplanned temporary modification from ramping rates or Belden Powerhouse block loading requirements, the Licensee shall provide written notification to the Deputy Director including: a description of the event that necessitated the temporary modification, an update of the conditions associated with the modification, an estimated timeline for returning to compliance with certification requirements, and future actions the Licensee proposes to implement to avoid the need for a ramping rate or block loading modification resulting from a similar event in the future, if appropriate.

CONDITION 3. Pulse Flows

3(A) Pulse Flows

The Licensee shall implement pulse flows from Canyon Dam and Belden Dam as outlined in this condition. For purposes of this condition, water year types shall be determined in accordance with Condition 1(A). No pulse flows are required if two successive days of mean daily water temperature greater than 10°C are measured at Gage NF-2 (Seneca Reach) or Gage NF-70 (Belden Reach), or if rainbow trout

spawning is observed in either the Seneca Reach or Belden Reach and reported to the Licensee by staff by the Forest Service, CDFW, or USFWS. Pulse flow releases from Canyon Dam and Belden Dam shall be implemented continuously for a minimum of 12 hours at the stream flow shown in Table 4. The requirement to perform February and March pulse flows shall be based on the water year as defined on the first of the month (i.e., February 1 and March 1, respectively). Pulse flows shall be implemented consistent with the Ramping Rates (Condition 2).

Table 4. North Fork Feather River Pulse Flows

Month	Dry Water Year	Normal Water Year	Wet Water Year
January	--	675 cfs	675 cfs
February	--	1,000 cfs	1,200 cfs
March	700 cfs	1,000 cfs	1,200 cfs

In March of Normal and Wet water years, following implementation of the pulse flows in the Seneca Reach, the Licensee shall reduce and hold the pulse flows at 400 cfs for six hours between 9:00 AM and 3:00 PM of a weekend (i.e., Saturday or Sunday).

3(B) Evaluation of Pulse Flows

After considering monitoring results from Condition 9 (Gravel), or following recommendation(s) by one for more resource agency or State Water Board staff, the Deputy Director may require the Licensee to initiate consultation with the Forest Service, CDFW, USFWS, and State Water Board staff to determine if the required pulse flows are protecting water quality and beneficial uses, and determine what, if any, adjustments are necessary.

Within six months of initiating consultation, the Licensee shall submit to the Deputy Director: documentation of consultation; any changes to pulse flows recommended by the Licensee; the consulting agencies' comments and recommendations; and a description of how the proposed changes to pulse flow requirements incorporate or address the comments and recommendations. Based on the monitoring results and any other relevant information, the Deputy Director may make changes to the pulse flow requirements to the extent necessary to ensure reasonable protection of the beneficial uses of the North Fork Feather River. If changes to the pulse flows are required, within 10 days of the Deputy Director's decision the Licensee shall file with FERC a request to amend the FERC license for implementation of the pulse flows. The Licensee shall implement the new pulse flows as soon as reasonably practicable after receiving the Deputy Director's decision and any other required approvals.

3(C) Lower Butt Creek Pulse Flows

Based on the Butt Creek Habitat Evaluation Report and other information developed in accordance with Condition 10 (Lower Butt Creek Habitat Evaluation), the Deputy Director may require the Licensee to develop a Lower Butt Creek Pulse Flow Plan (LBC Pulse Flow Plan) for Deputy Director review and approval.

If required by the Deputy Director, the LBC Pulse Flow Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. At a minimum the LBC Pulse Flow Plan shall describe the magnitude, ramping, and duration of pulse flows that will be implemented in order to recruit and distribute spawning sized gravel, taking into consideration woody debris and live vegetation concerns. The Licensee shall also include the following with the LBC Pulse Flow Plan: documentation of consultation; comments and recommendations made in connection with the LBC Pulse Flow Plan; and a description of how the LBC Pulse Flow Plan incorporates or addresses the comments and recommendations. The Deputy Director may make changes, including changes to the magnitude, ramping, or duration of the pulse flows, as part of any approval. Within 10 days of Deputy Director approval, the Licensee shall file the Deputy Director-approved LBC Pulse Flow Plan with FERC. The Licensee shall implement the new pulse flows as soon as reasonably practicable after receiving Deputy Director and any other required approvals.

CONDITION 4. Water Surface (Reservoir) Elevations

The Licensee shall operate Lake Almanor, Butt Valley Reservoir, and Belden Forebay to maintain water surface elevations (also referred to as reservoir levels) at or above the elevations listed in Table 5, Table 6, and Table 7, respectively. For purposes of this condition, water year types shall be determined in accordance with Condition 1(A). Water surface elevations may be measured at alternate gages if approved by the Deputy Director as part of the Gaging and Facilities Modification Plan (Condition 5).

Table 5. Lake Almanor Water Surface Elevations, as measured at Gage NF-1 (USGS Gage No. 11399000) using PG&E datum[11]

Water Year Type	Reservoir Elevation from September 1 through May 31	Reservoir Elevation from June 1 through August 31
Wet	4,485 feet	4,485 feet
Normal	4,485 feet	4,485 feet
Dry	4,483 feet	4,480 feet
Critically Dry	4,482 feet	4,480 feet

Table 6. Butt Valley Reservoir Water Surface Elevations, as measured at Gage NF-8 using PG&E datum

Water Year Type	Reservoir Elevation from October 1 through May 30	Reservoir Elevation from June 1 through September 30
All Types	4,115 feet	4,120 feet

[11] PG&E datum is 10.2 feet lower than the USGS datum.

Table 7. Belden Forebay Water Surface Elevations, as measured at Gage BD-1 using PG&E datum

Water Year Type	Reservoir Elevation from January 1 through December 31
All Types	2,905 feet

If the Licensee determines that one or more reservoir water surface elevation requirement will not be met, the Licensee shall notify the Deputy Director at least 30 days in advance of when the Licensee projects the reservoir's water surface elevation will fall below the requirement. Prior to or immediately following Deputy Director notification, the Licensee shall consult with Forest Service, USFWS, CDFW, Plumas County, and State Water Board staff, to identify actions the Licensee will implement to notify reservoir users and maximize access to and use of the reservoirs given the projected lower water surface elevation(s). The Licensee shall provide the Deputy Director with the list of actions that the Licensee will implement no later than seven days prior to when the Licensee projects the reservoir's water surface elevation will fall below the requirement. The Licensee shall implement the actions unless the Deputy Director requires the Licensee to implement additional or modified actions. Within 30 days of the initial Deputy Director notice, the Licensee shall provide the Deputy Director with documentation explaining why the water surface elevation(s) was not met and what steps the Licensee will take to prevent it from occurring in the future, as feasible and appropriate.

The Deputy Director may impose additional water surface elevation requirements to the extent necessary to ensure the reasonable protection of the beneficial uses of Lake Almanor, Butt Valley Reservoir, and Belden Forebay. The Licensee shall file any additional requirements with FERC within 10 days of Deputy Director issuance. The Licensee shall implement the new water surface elevation requirements as soon as reasonably practicable after receiving the Deputy Director's decision and any other required approvals.

The water surface elevations specified in Tables 5-7 may be temporarily modified consistent with the situations described in Condition 1(F). For any unplanned water surface elevation modifications, the Licensee shall comply with the notification (24-hours), update (96-hour), and reporting provisions (within 30 days) required in Condition 1(F).

CONDITION 5. Gaging and Facilities Modifications

No later than one year following license issuance, the Licensee shall submit a Gaging and Facilities Modification Plan to the Deputy Director for review and approval. The Gaging and Facilities Modification Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. Unless otherwise approved by the Deputy Director in writing, construction and modification of facilities and gages for the requirements outlined in this certification shall be completed and in

use no later than three years following license issuance. The Gaging and Facilities Modification Plan shall incorporate rehabilitation of the Lower Butt Creek gage (Gage NF-9).

At a minimum, the Gaging and Facility Modification Plan shall include:

(i) Purpose of the plan;

(ii) List, map, and detailed description of existing and proposed new gages associated with the Project. The description shall include: (a) type of gages; (b) frequency of data collection and data quality assurance/quality control (QA/QC) procedures; (c) where data for the gages will be stored and made publicly available; and (d) gage maintenance.

(iii) Detailed descriptions of proposed facility and gage modifications necessary to comply with this certification, including relevant maps and designs;

(iv) Schedule for installation of new gage(s) and facilities modifications, and reporting upon completion of construction and modifications associated with the plan;

(v) Measures that will be implemented to protect water quality and beneficial uses during: (a) installation/construction, operation, and maintenance of gages over the term of the license and any extensions, and (b) construction of any proposed facilities modifications;

(vi) Monitoring and reporting that will be implemented during construction and modifications of gages and facilities;

(vii) A plan for how modifications to the plan will be implemented to address gaging-related changes throughout the term of the FERC license and any extensions; and

(viii) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Gaging and Facilities Modification Plan, and any approved amendments thereto. The Licensee shall implement the Gaging and Facilities Modification Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 6. Water Temperature Management Program

6(A) Canyon Dam Supplemental Flows

Within 60 days of license issuance, the Licensee shall operate Canyon Dam releases to prevent the Maximum Weekly Average Temperature (MWAT)[12] of the North Fork Feather River from exceeding 20°C, as measured at Gage NF-70 (USGS Gage No. 11401112) and Gage NF-56 (USGS Gage No. 11404330), from June 16 through September 15. The Licensee shall release supplemental flows up to 250 cfs from the low-level Canyon Dam outlet to reduce water temperature. Supplemental flows include the MIFs outlined in Table 2. To the extent feasible, the Licensee shall initiate Canyon Dam releases from the low-level Canyon Dam outlet prior to, and in all cases no later than within 24 hours of an exceedance of 20°C MWAT at Gage NF-70 or Gage NF-56 (between June 16 - September 15). Releases from the Canyon Dam outlet shall be implemented in compliance with the Ramping Rates (Condition 2). Temporary modifications of the supplemental flows are subject to the same requirements listed in Condition 1(E) and 1(F).

6(B) Supplemental Flow Reductions

If reliable information[13] such as the monitoring results from Condition 7 (Water Quality Monitoring) or Condition 8 (Lake Almanor Fishery Monitoring) indicates that continued release of supplemental flows may adversely affect the Lake Almanor fishery, the Deputy Director may decrease or suspend the supplemental flows, or require the Licensee to initiate consultation with the Forest Service, CDFW, USFWS, and State Water Board staff to determine if a decrease or suspension of the supplemental flows is necessary to reasonably protect the cold freshwater beneficial uses of Lake Almanor and the North Fork Feather River, and determine what, if any, adjustments are necessary. The Deputy Director will promptly review any recommendation to evaluate, decrease, or suspend supplemental flows that is submitted by a resource or local agency and supported by adequate documentation. Within six months of initiating consultation or any other time frame specified by the Deputy Director, the Licensee shall submit to the Deputy Director: documentation of consultation; a recommendation regarding the need for a modification of the existing supplemental flows; the consulting agencies' comments and recommendations; and a description of how the recommendation incorporates or addresses the comments and recommendations.

The Licensee shall file with FERC the Deputy Director-approved decreases in or suspension of the supplemental flows or other actions. The Licensee shall implement the decreases in or suspension of supplemental flows or other actions upon receipt of

[12] MWAT is defined as the maximum value of seven-day running averages of mean daily water temperatures.

[13] Such reliable information may include evidence of a fish kill or evidence of a significant reduction in suitable habitat likely to adversely affect fishery resources.

Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

6(C) Fishery Performance Goals

Within two years of license issuance, the Licensee shall develop a Fisheries Goals Report in consultation with Forest Service, CDFW, USFWS, and State Water Board staff and submit it to the Deputy Director for review and approval. The Fisheries Goals Report shall identify fishery performance metrics (e.g., total abundance, density, age composition, spatial distribution, seasonal survival, etc.) for the North Fork Feather River that are specific, measurable, attainable with improved habitat conditions, and time-bound, which can be used to assess whether the supplemental flows are effectively controlling temperature and providing reasonable protection to cold freshwater species. The Licensee shall include with the Fisheries Goals Report: documentation of consultation; comments and recommendations made in connection with the Fisheries Goals Report; and a description of how the Fisheries Goals Report incorporates or addresses the comments and recommendations. The Deputy Director may require modifications as part of any approval.

The Licensee shall file with FERC the Deputy Director-approved Fisheries Goals Report and any approved amendments thereto.

6(D) Feather River Temperature Contingency Plan

If at any time the Deputy Director determines and notifies the Licensee that the supplemental flows are insufficient to achieve the goals in the Fisheries Goals Report, the Licensee shall develop a Feather River Temperature Contingency Plan (Contingency Plan) in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The Licensee shall submit the Contingency Plan to the Deputy Director for review and approval in accordance with the timeline established in the Deputy Director's notification. The goal of the Contingency Plan is to identify action(s) for achieving the fisheries goals and improving habitat conditions altered by the diversion, storage, and use of water associated with Project operations. The Licensee shall evaluate a range of actions as part of the consultation including additional supplemental flows and installation of thermal curtains at the Prattville and Caribou intakes. The Licensee shall include with the Contingency Plan: documentation of consultation; comments and recommendations made in connection with the Contingency Plan; and a description of how the Contingency Plan incorporates or addresses the comments and recommendations. The Deputy Director may approve the Contingency Plan, with or without conditions, or require the Licensee to evaluate or implement any other temperature control measures that the Deputy Director determines are feasible, reasonable, and necessary to meet the fisheries goals. The Licensee shall file with FERC the Deputy Director-approved Contingency Plan or any other temperature control measures required by the Deputy Director. The Licensee shall implement the Contingency Plan or other temperature control measures required by the Deputy Director upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 7. Water Quality Monitoring

No later than one year following license issuance, the Licensee shall submit a Water Quality Monitoring Plan (Water Quality Plan) to the Deputy Director for review and approval. The Water Quality Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, Plumas County, Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board), and State Water Board staff. Section 5 of Appendix A to the Settlement Agreement may serve as the basis for the Water Quality Plan.

At a minimum, the Water Quality Plan shall include:

(i) List of water quality parameters to be monitored that includes, but is not limited to: water temperature, dissolved oxygen, turbidity, and bacteria. The list shall also include current water quality objectives for the parameters as provided in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (SR/SJR Basin Plan) (Central Valley Regional Water Board 2018) or amendments thereto;

(ii) Proposed monitoring plan, including monitoring locations with a map, sampling protocols, analytical methods, QA/QC procedures, and the schedule and frequency of monitoring;

(iii) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the plan based on the monitoring results or new information related to water quality conditions in the watershed that may be impacted by Project operations. Reports shall include identification of any potential water quality concerns, as well as proposed actions to address any Project-related impacts. Reports shall be submitted to Forest Service, CDFW, Plumas County, USFWS, Central Valley Regional Water Board, and State Water Board staff; and

(iv) Documentation of consultation with Forest Service, CDFW, USFWS, Plumas County, Central Valley Regional Water Board, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications to the plan as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Water Quality Plan, and any approved amendments thereto. The Deputy Director also may direct the Licensee to implement measures to address water quality impacts associated with the Project. The Licensee shall implement the Water Quality Plan and any other required measures upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 8. Lake Almanor Fishery Monitoring

No later than one year following license issuance, the Licensee shall submit a Lake Almanor Fishery Monitoring Plan (Almanor Fish Monitoring Plan) to the Deputy Director for review and approval. The Almanor Fish Monitoring Plan shall be developed in consultation with the Forest Service, Plumas County, CDFW, USFWS, and State Water Board staff. The primary goal of the Almanor Fish Monitoring Plan shall be to monitor the health of Lake Almanor's fisheries. At a minimum, the Almanor Fish Monitoring Plan shall include:

(i) Types of monitoring that will be implemented in Lake Almanor, including but not limited to angler surveys, fish condition, and fish community composition. The plan shall describe who will conduct the monitoring and how it will be performed, including methods, QA/QC, frequency, and timing;

(ii) An annual evaluation of the monitoring data to determine, in consultation with CDFW, Forest Service, Plumas County, USFWS, and State Water Board staff, whether any changes to Lake Almanor's fish stocking program are necessary to ensure the Project's operations do not adversely affect Lake Almanor's fishery. The annual evaluation shall include a recommendation, if necessary, to fund additional stocking under Condition 12 (Fish Stocking);

(iii) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the plan based on the monitoring results or new information related to fishery conditions in Lake Almanor that may be impacted by Project operations. Reports shall include identification of any potential fishery concerns, as well as proposed actions to address any Project-related impacts. Reports shall be submitted to Forest Service, Plumas County, CDFW, USFWS, and State Water Board staff; and

(iv) Documentation of consultation with the Forest Service, Plumas County, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Deputy Director also may direct the Licensee to implement measures to address impacts to Lake Almanor's fisheries associated with the Project. The Licensee shall file with FERC the Deputy Director-approved Almanor Fish Monitoring Plan, and any approved amendments thereto. The Licensee shall implement the Almanor Fish Monitoring Plan and any other required measures upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 9. Gravel

No later than two years following license issuance, the Licensee shall submit a Gravel Plan to the Deputy Director for review and approval. The Gravel Plan shall be

developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. Section 1.3(B) of Appendix A to the Settlement Agreement may serve as the basis for the Gravel Plan.

The primary goal of the Gravel Plan shall be to evaluate the movement of sediment and gravel in the Belden Reach and Seneca Reach, and implement actions to address gravel transport, if needed. At a minimum, the Gravel Plan shall include:

(i) Objectives and goals that support successful sediment and gravel transport while maintaining SR/SJR Basin Plan water quality objectives;

(ii) Monitoring locations;

(iii) Protocol, timing, and frequency of monitoring;

(iv) Metrics for evaluating the sediment and gravel movement, including numeric triggers, that will identify the need to modify the pulse flows or implement other actions;

(v) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the plan based on the monitoring results or new information related to sediment and gravel conditions that may be impacted by Project operations. Reports shall include identification of any potential concerns, as well as proposed actions to address any Project-related impacts; and

(vi) Documentation of consultation with the Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Deputy Director also may direct the Licensee to implement measures to address impacts to sediment and gravel movement associated with the Project. The Licensee shall file with FERC the Deputy Director-approved Gravel Plan, and any approved amendments thereto. The Licensee shall implement the Gravel Plan and any other required measures upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 10. Lower Butt Creek Habitat

No later than two years following license issuance, the Licensee shall submit a Lower Butt Creek Habitat Evaluation Plan (LBC Habitat Plan) to the Deputy Director for review and approval. The primary goal of the LBC Habitat Plan shall be to monitor and assess aquatic habitat quality and the need for pulse flows or other actions in Lower Butt Creek between Butt Valley Dam and the confluence with the North Fork Feather River. The LBC Habitat Plan shall be developed in consultation with the Forest Service, CDFW,

USFWS, and State Water Board staff. Section 1.8 of Appendix A to the Settlement Agreement may serve as the basis for the LBC Habitat Plan required by this condition.

At a minimum, the LBC Habitat Plan shall include:

(i) The purpose of the LBC Habitat Plan;

(ii) Proposed monitoring, including monitoring locations with a map, sampling protocols, and the schedule and frequency of monitoring;

(iii) Criteria by which habitat quality will be evaluated;

(iv) Criteria by which the need for pulse flows or other actions will be assessed;

(v) Provisions for and a schedule to complete and submit to the Deputy Director, for review and approval, a Butt Creek Habitat Evaluation Report that documents, summarizes, and analyzes monitoring results and includes recommendations regarding the need for pulse flows or other actions. The Butt Creek Habitat Evaluation Report shall be developed in consultation with Forest Service, CDFW, USFWS, and State Water Board staff; and

(vi) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved LBC Habitat Plan, and any approved amendments thereto. The Licensee shall implement the LBC Habitat Plan and Butt Creek Habitat Evaluation Report, respectively, upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 11. North Fork Feather River Biological Resources Monitoring

No later than one year following license issuance, the Licensee shall submit a North Fork Feather River Biological Resources Monitoring Plan (Biological Resources Monitoring Plan) to the Deputy Director for review and approval. The Biological Resources Monitoring Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The Biological Resources Monitoring Plan shall describe stream fish, benthic macroinvertebrate (BMI), and amphibian monitoring the Licensee will conduct in Project-affected reaches over the term of the license and any extensions. Section 1.9 of Appendix A to the Settlement Agreement may serve as the basis for the Biological Resources Monitoring Plan required by this condition.

At a minimum, the Biological Resources Monitoring Plan shall include:

(i) The purpose of the plan;

(ii) Specific years that monitoring will occur throughout the term of the license and any extensions;

(iii) Standardized sampling and data protocols with consideration given to methods used for downstream monitoring associated with the Rock Creek-Cresta Hydroelectric Project (FERC Project No. 1962) and Poe Hydroelectric Project (FERC Project No. 2107);

(iv) Fish data monitoring protocols that will support assessment of the fisheries with respect to the Fisheries Goals Report (Condition 6 (C));

(v) BMI monitoring using the Surface Water Ambient Monitoring Program Protocols[14] or its successor program, or an alternative methodology approved by the Deputy Director. The protocols shall include population heterogeneity, composition, and trends;

(vi) Monitoring of state and/or federally listed amphibian species;

(vii) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The reports shall include identification of any impacts to biological resources and recommendations to address such impacts. The Licensee shall propose any updates to the Biological Resources Monitoring Plan based on the monitoring results. Reports shall be submitted to the Forest Service, CDFW, USFWS, and State Water Board staff; and

(viii) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Deputy Director also may direct the Licensee to implement measures to address impacts to biological resources associated with the Project. The Licensee shall file with FERC the Deputy Director-approved Biological Resources Monitoring Plan, and any approved amendments thereto. The Licensee shall implement the Biological Resources Monitoring Plan and any required measures upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

[14] State Water Board. 2017. *Surface Water Ambient Monitoring Program: Quality Assurance Program Plan.* May 2017, and any amendments thereto.

CONDITION 12. Fish Stocking

No later than one year following license issuance, the Licensee shall enter into an agreement with CDFW to make funds available annually for CDFW's fish stocking efforts in Lake Almanor and the Belden Reach. The Licensee shall implement the agreement, and any amendments thereto, for the term of the FERC license and any extensions. Section 7.5 of Appendix A to the Settlement Agreement may serve as the basis for the agreement between the Licensee and CDFW. The agreement shall include funding provisions for any additional Lake Almanor fish stocking determined to be necessary under Condition 8 (Lake Almanor Fishery Monitoring). The Licensee shall provide the Deputy Director with a copy of the agreement once executed. The Licensee shall notify and provide documentation to the Deputy Director of any modification or amendment to the agreement over the license term and any extensions.

CONDITION 13. Recreation Facilities Management

No later than two years following license issuance, the Licensee shall submit a Recreation Facilities Management Plan (Recreation Plan) to the Deputy Director for review and approval. The Recreation Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. Appropriate portions of section 7 of Appendix A to the Settlement Agreement may serve as the basis for the Recreation Plan.

At a minimum, the Recreation Plan shall include:

(i) A description of operations and maintenance activities associated with the Project recreation facilities that have the potential to impact water quality, and measures that will be implemented to address any impacts;

(ii) Identification of recreation use surveys that will be conducted as part of the Project and submittal of the associated results to State Water Board staff;

(iii) A list, description, and schedule for modifications to existing and construction of new recreation facilities associated with the Project. For each facility modification or new construction, the Licensee shall describe the measures and monitoring the Licensee will implement to protect water quality, beneficial uses, and aquatic biological resources;

(iv) Format, schedule, and reporting to document, summarize, and analyze completion of recreation facility construction or modification and associated monitoring results; and

(v) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications to the Recreation Plan as part of any approval. Throughout the term of the FERC license and any extensions, the Licensee shall submit any modifications to or new construction of recreation facilities not covered by the original Deputy Director-approved Recreation Plan as amendments to the plan for Deputy Director review and approval. The Licensee shall file the Deputy Director-approved Recreation Plan, and any required modifications or approved amendments thereto, with FERC. The Licensee shall implement the Recreation Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

If the result of a recreational survey indicate an increase in recreation use, the Licensee shall evaluate the potential effects to determine whether modifications to Project facilities or other measures are needed to protect water quality and beneficial uses and provide the Deputy Director with the analysis and any associated recommendations for review and approval. The Deputy Director may make modifications as part of any approval, including directing the Licensee to implement specific measures or actions.

CONDITION 14. Whitewater Recreation Flows

No later than two years following license issuance, the Licensee shall submit a Whitewater Recreation Flow Plan (Whitewater Plan) to the Deputy Director for review and approval. The Whitewater Plan shall be developed in consultation the Forest Service, CDFW, USFWS, American Whitewater, Plumas County, and State Water Board staff. The primary goal of the Whitewater Plan shall be to develop whitewater recreation flows and adaptive management protocols that help ensure adequate boating opportunities in the Belden Reach throughout the term of the license and any extensions. Section 2 of Appendix A to the Settlement Agreement may serve as the basis for the Whitewater Plan required by this condition.

At a minimum, the Whitewater Plan shall include:

(i) Magnitude and duration of whitewater recreation flows;

(ii) Frequency and timing of whitewater recreation flows;

(iii) Potential situations in which the Licensee may be excused from providing all or a portion of whitewater recreation flows;

(iv) Protocol for monitoring whitewater boating use and triggers to add or remove whitewater boating days based on whitewater boating monitoring;

(v) Noticing to inform the Forest Service, CDFW, USFWS, American Whitewater, Plumas County, and State Water Board staff, and the public when the Licensee plans to release whitewater recreation flows;

(vi) Format, schedule, and reporting to document whitewater boating opportunities and use. The Licensee shall propose updates to the Whitewater Plan based on the monitoring results and other related information;

(vii) Implementation of flows outlined in Condition 3(A) (Pulse Flows) that require the Licensee to, in March of Normal and Wet water years, following implementation of pulse flows in the Seneca Reach, release and hold 400 cfs for six hours between 9:00 AM and 3:00 PM of a weekend; and

(viii) Documentation of consultation with Forest Service, CDFW, USFWS, American Whitewater, Plumas County, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Whitewater Plan, and any approved amendments thereto. The Licensee shall implement the Whitewater Plan upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 15. Aquatic Invasive Species

No later than two years following license issuance, the Licensee shall submit an Aquatic Invasive Species Plan (AIS Plan) to the Deputy Director for review and approval. The AIS Plan shall be developed in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff. The AIS Plan shall provide guidance to manage aquatic invasive species that occur or have the potential to occur in Project-affected waters. The goals of the AIS Plan are to: (1) identify and implement best management practices (BMPs) to minimize and prevent the introduction and spread of aquatic invasive species into and throughout Project-affected waters; (2) provide education and outreach to ensure public awareness of the potential effects of aquatic invasive species throughout Project-affected waters and actions needed to avoid or address them; (3) develop and implement monitoring programs to ensure early detection of aquatic invasive species; and (4) monitor spread of established aquatic invasive species.

At a minimum, the AIS Plan shall include:

(i) The purpose of the plan;

(ii) Identification of aquatic invasive species that occur or have the potential to occur in Project-affected waters. For those that occur, include information on where the aquatic invasive species occur and its density;

(iii) BMPs the Licensee will implement to manage aquatic invasive species;

(iv) Education and outreach program the Licensee will implement to ensure public awareness and actions to avoid the introduction and spread of aquatic invasive species;

(v) Monitoring program the Licensee will implement to ensure early detection of new aquatic invasive species and monitor the spread or reduction of established aquatic invasive species. The monitoring program shall include

the species that will be monitored for, monitoring protocols, frequency, and locations;

(vi) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The reports shall include identification of changes associated with the presence of aquatic invasive species in Project-affected waters and recommendations to address the presence. The Deputy Director may direct the Licensee to implement measures to address aquatic invasive species in Project-affected waters. The Licensee shall propose any updates to the AIS Plan based on the monitoring results or other available information. Reports shall be submitted to the Forest Service, CDFW, USFWS, and State Water Board staff; and

(vii) Documentation of consultation with the Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved AIS Plan, and any approved amendments thereto. The Licensee shall implement the AIS Plan upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 16. Roads

Within two years of license issuance, the Licensee shall file a Road Management Plan with the Deputy Director for review and approval. The Road Management Plan shall be developed in consultation with Central Valley Regional Water Board and State Water Board staff. The Road Management Plan shall describe the maintenance and construction of Project roads in a manner that is protective of water quality. At a minimum, the Road Management Plan shall include the following:

(i) An inventory and map of all roads associated with the Project, including locations of drainage structures, streams, and surface water bodies;

(ii) An assessment of Project roads to determine if any drainage structures or road segments are impacting or have the potential to impact water quality;

(iii) Proposed measures and an implementation schedule to rehabilitate existing damage and minimize erosion from Project roads. Proposed measures designed to improve drainage should be consistent with the most current United States Department of Agriculture (USDA), Forest Service National Best Management Practices for Water Quality Management on National Forest System Lands (USDA Forest Service 2012);

(iv) A process for the Licensee to propose updates or modifications to the plan for activities unknown at the time of plan approval, such as new road construction or decommissioning;

(v) A schedule and plan for inspection and maintenance of Project roads throughout the term of the license and any extensions; and

(vi) Documentation of consultation with Central Valley Regional Water Board and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Road Management Plans, and any approved amendments thereto. The Licensee shall implement the Road Management Plan upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 17. Reintroduction of Anadromous Fish

The State Water Board reserves the authority to modify or add conditions to this certification if State Water Board staff determine that it is reasonably foreseeable that state or federally listed anadromous fish species will be reintroduced into Project-affected streams (e.g., anadromous fish passage per the Amended Feather River Habitat Expansion Agreement [dated March 2011]), to ensure adequate protection of SR/SJR Basin Plan objectives and beneficial uses.

The State Water Board also reserves the authority to require the Licensee to develop and conduct studies if it is reasonably foreseeable that listed anadromous fish species will be reintroduced into Project-affected areas. Such studies shall be designed in consultation with the National Marine Fisheries Service, the Forest Service, CDFW, USFWS, and State Water Board staff, to develop fish passage, flows, or other measures, as well as determine appropriate modifications to the certification to minimize potential impacts and protect water quality and beneficial uses. Introduction of anadromous fish may require reevaluation of Project facilities, flow regimes, fish stocking plans, gravel augmentation, temperature control measures, and access to Project-affected tributaries.

CONDITION 18. Annual Consultation Meetings

No later than one year following license issuance, the Licensee shall establish a Technical Review Group (TRG) to meet annually regarding implementation of the Project license. At a minimum, the Forest Service, CDFW, USFWS, Plumas County, other interested parties, and State Water Board staff shall be invited to participate in the TRG. The annual meeting shall be noticed at least 30 days in advance on the Licensee's Project webpage and shall be open to the public. The TRG shall establish communication protocols to facilitate interactions between group members that allow for open participation and communication between all parties.

The first meeting of the TRG shall be held no later than the first full calendar year after license issuance. At the annual meetings, the TRG shall:

(i) Review the status of implementing the FERC license and certification conditions;

(ii) Review monitoring data from all monitoring conducted the previous year;

(iii) Review elements of current year maintenance plans and any non-routine maintenance;

(iv) Discuss foreseeable changes to Project facilities or features;

(v) Discuss necessary revisions or modifications to MIFs, ramping rates, pulse flows, supplemental flows, or plans required or approved as part of this certification; and

(vi) Discuss species listing implications, including:

a. Needed protection measures for species newly listed as threatened, endangered, or sensitive;

b. Changes to existing plans for actions that may no longer be necessary due to delisting of a species; and

c. Changes to existing plans to incorporate new information about species requiring protection.

The Licensee shall provide at least 30-day notice of the annual meeting to the TRG. Materials shall be provided to TRG members at least 30 days prior to the annual meeting. The Licensee shall submit a report to State Water Board staff that summarizes the annual consultation meeting no later than 60 days following the annual consultation meeting.

CONDITION 19. Extremely Dry Conditions

In the event of extremely dry conditions, which may include a year in which the Governor of the State of California declares a drought emergency for Plumas County or Butte County, or multiple consecutive Dry or Critically Dry water year types, the Licensee may request modification of the flow and/or surface water elevation requirements of this certification. If the Licensee anticipates that it may request modification pursuant to this condition, the Licensee shall notify the Forest Service, CDFW, USFWS, and the Deputy Director of the Licensee's concerns related to flows and/or water surface elevations as early as possible. The Licensee shall request modification pursuant to this condition by requesting Deputy Director review and approval of a Revised Operations Plan at least 30 days in advance of any requested flow or water surface level modifications. The Licensee shall develop any Revised Operations Plan in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff for flows during the extremely dry conditions.

The Licensee shall provide notice of the proposed Revised Operations Plan to interested parties at least seven days prior to submittal to the Deputy Director. The Licensee's request shall include: an estimate of water to be saved and the alternative beneficial uses for which the water is being conserved; a timeline for the return to regular operations; proposed monitoring for the revised operations, including an estimation of any impacts the revised operations may have on any beneficial uses of water; and proposed water conservation measures that will be implemented. If conservation measures are not applicable, the Licensee shall describe the circumstances and justification for not implementing water conservation measures.

The Licensee shall submit the proposed Revised Operations Plan to the Deputy Director for review and approval at least 30 days prior to the requested modifications, unless otherwise approved in writing by the Deputy Director. The Licensee shall also provide a summary of any comments received and how the comments were addressed. The Deputy Director may require modifications to the Revised Operations Plan as part of any approval. The Licensee may implement the Revised Operations Plan upon receipt of Deputy Director and other required approvals, in accordance with the schedule and requirements specified therein. The Licensee shall file with FERC the Deputy Director-approved Revised Operations Plan, and any approved amendments thereto.

CONDITION 20. Grebes Management

No later than two years following license issuance, the Licensee shall submit a Grebes Management Plan to the Deputy Director for review and approval. The Grebes Management Plan shall be developed in consultation with the CDFW, USFWS, Plumas Audubon Society, and State Water Board staff. The goal of the Grebes Management Plan shall be to identify any adverse Project impacts on Grebe nesting and propose any reasonable measures to avoid or reduce identified adverse impacts. The Licensee shall include with the Grebes Management Plan: documentation of consultation with CDFW, USFWS, and Forest Service; comments and recommendations made in connection with the plan; and a description of how the plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Grebes Management Plan, and any approved amendments thereto. The Licensee shall implement the Grebes Management Plan upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITIONS. 21 – 43.

CONDITION 21. The Licensee shall ensure no net loss of wetland or riparian habitat functions and compliance with the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Board 2019).

CONDITION 22. Any plan developed as a condition of this certification will require review and approval by the Deputy Director. The State Water Board's approval authority, including authority delegated to the Deputy Director or others, includes the authority to withhold approval or to require modification of a proposal, plan, or report prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required item in a timely manner. If a time extension is needed to submit an item for Deputy Director approval, the Licensee shall submit a written request for the extension, with justification, to the Deputy Director no later than 60 days prior to the deadline. The Licensee shall file with FERC any Deputy Director-approved time extensions. The Licensee shall not implement any plans or reports until after receiving Deputy Director approval and any other necessary regulatory approvals.

CONDITION 23. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) to incorporate changes in technology, sampling, or methodologies; (2) if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair beneficial uses; (3) to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act; (4) to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to meet water quality objectives and protect beneficial uses of water; and (5) to require additional monitoring and/or other measures, as needed, to ensure that continued Project operations meet water quality objectives and protect the beneficial uses of Lake Almanor, Butt Valley Reservoir, and the North Fork Feather River.

CONDITION 24. Future changes in climate projected to occur during the FERC license term may significantly alter the baseline assumptions used to develop the conditions of this certification. The State Water Board reserves authority to add to or modify the conditions of this certification, to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to Project-affected stream reaches.

CONDITION 25. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this certification.

CONDITION 26. This certification is contingent on compliance with all applicable requirements of the SR/SJR Basin Plan.

CONDITION 27. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Licensee must take all reasonable measures to protect the beneficial uses of the North Fork Feather River, Lake Almanor, Butt Valley Reservoir, Lower Butt Creek, or their tributaries.

CONDITION 28. Unless otherwise specified in this certification or at the request of the Deputy Director, data and/or reports shall be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

CONDITION 29. This certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (ESA) (Fish & Game Code §§ 2050 – 2097) or the federal ESA (16 U.S.C. §§ 1531 – 1544). If a "take" will result from any act authorized under this certification or water rights held by the Licensee, the Licensee must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Licensee is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

CONDITION 30. The Licensee shall submit any change to the Project, including operations, facilities, technology changes or upgrades, or methodology, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state and/or federal agencies. If the State Water Board is not notified of a change to the Project, it will be considered a violation of this certification. If such a change would also require submission to FERC, the change must first be submitted and approved by the Executive Director of the State Water Board unless otherwise delegated in this certification or other State Water Board approval.

CONDITION 31. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies, penalties, process, or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 32. In response to a suspected violation of any condition of this certification, the State Water Board or Central Valley Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. (Wat. Code, §§ 1051, 13165, 13267, and 13383.)

CONDITION 33. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local approvals. The Licensee is responsible for compliance with all applicable federal, state, or local laws or ordinances and shall obtain authorization from applicable regulatory agencies prior to the commencement of Project activities.

CONDITION 34. Any requirement in this certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 35. Upon request, a construction schedule shall be provided to agency staff. The Licensee shall provide State Water Board and Central Valley Regional Water Board staff access to Project sites to document compliance with this certification.

CONDITION 36. A copy of this certification shall be provided to any contractor and all subcontractors conducting Project-related work, and copies shall remain in their possession at the Project site(s). The Licensee shall be responsible for work conducted by its contractor, subcontractors, or other persons conducting Project-related work.

CONDITION 37. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

CONDITION 38. Activities associated with operation and maintenance of the Project that threaten or potentially threaten water quality shall be subject to further review by the Deputy Director and Executive Officer of the Central Valley Regional Water Board. Any proposal for Project maintenance or repair work involving Project-affected water bodies, including desilting of dam impoundments, impoundment drawdowns to facilitate repair or maintenance work, and tailrace dredging, shall be filed with the Deputy Director for prior review and approval.

CONDITION 39. The Licensee shall comply with the terms and conditions in the State Water Board's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; State Water Board Order 2009-0009-DWQ, as amended by State Water Board Orders 2010-0014-DWQ and 2012-0006-DWQ), and ongoing amendments during the life of the Project.

CONDITION 40. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 41. This certification is subject to modification or revocation upon administrative or judicial review, including but not limited to review and amendment pursuant to California Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

CONDITION 42. This certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent application for certification was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application for certification specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

CONDITION 43. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.

DRAFT

Eileen Sobeck
Executive Director

Date

Attachments:

Attachment A:	Upper North Fork Feather River Hydroelectric Project Figures
Attachment B:	Upper North Fork Feather River Hydroelectric Project Facilities Description
Attachment C:	References

Attachment A
Upper North Fork Feather River Hydroelectric Project Figures

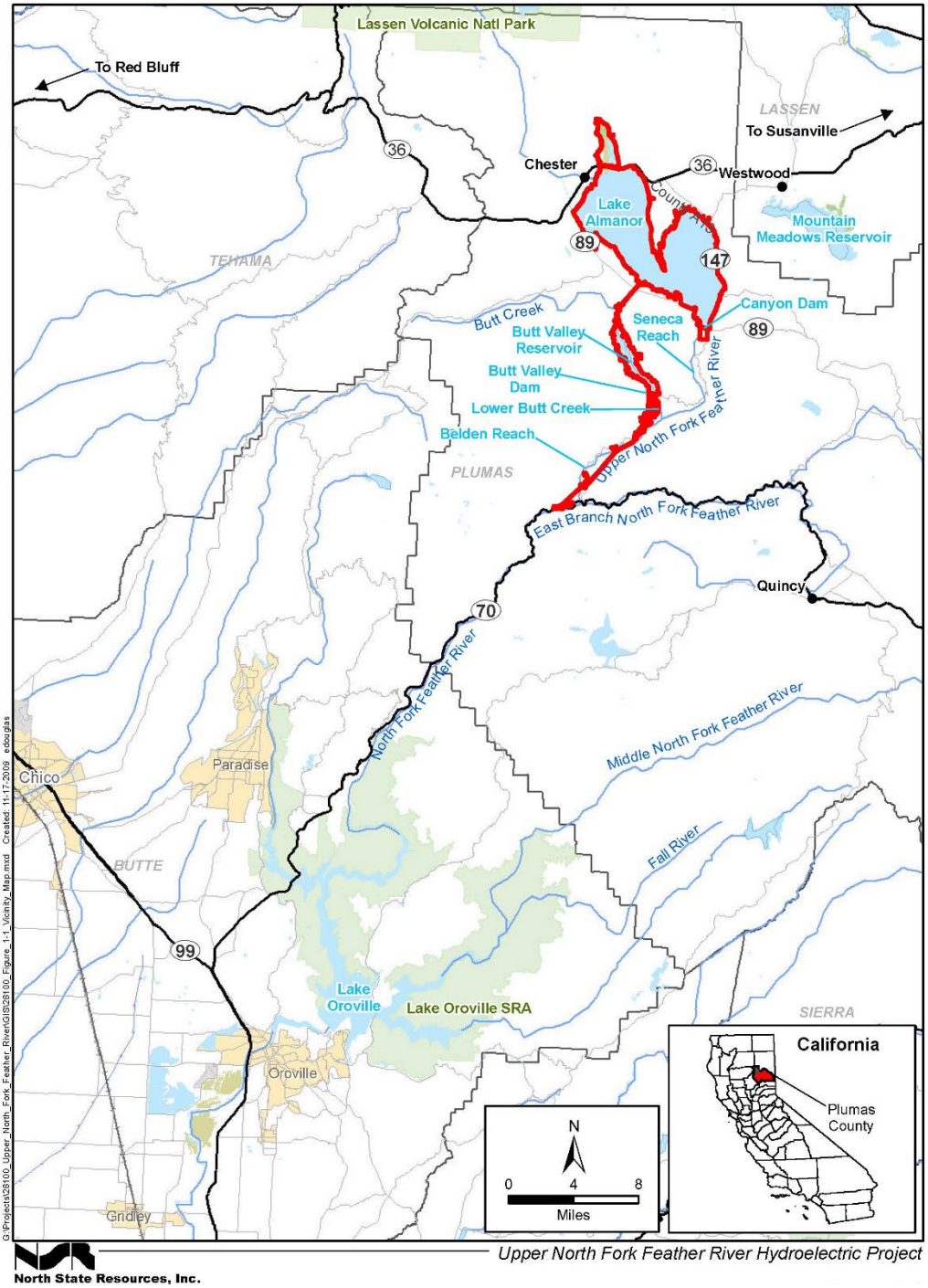

Figure 1. Project Location Map

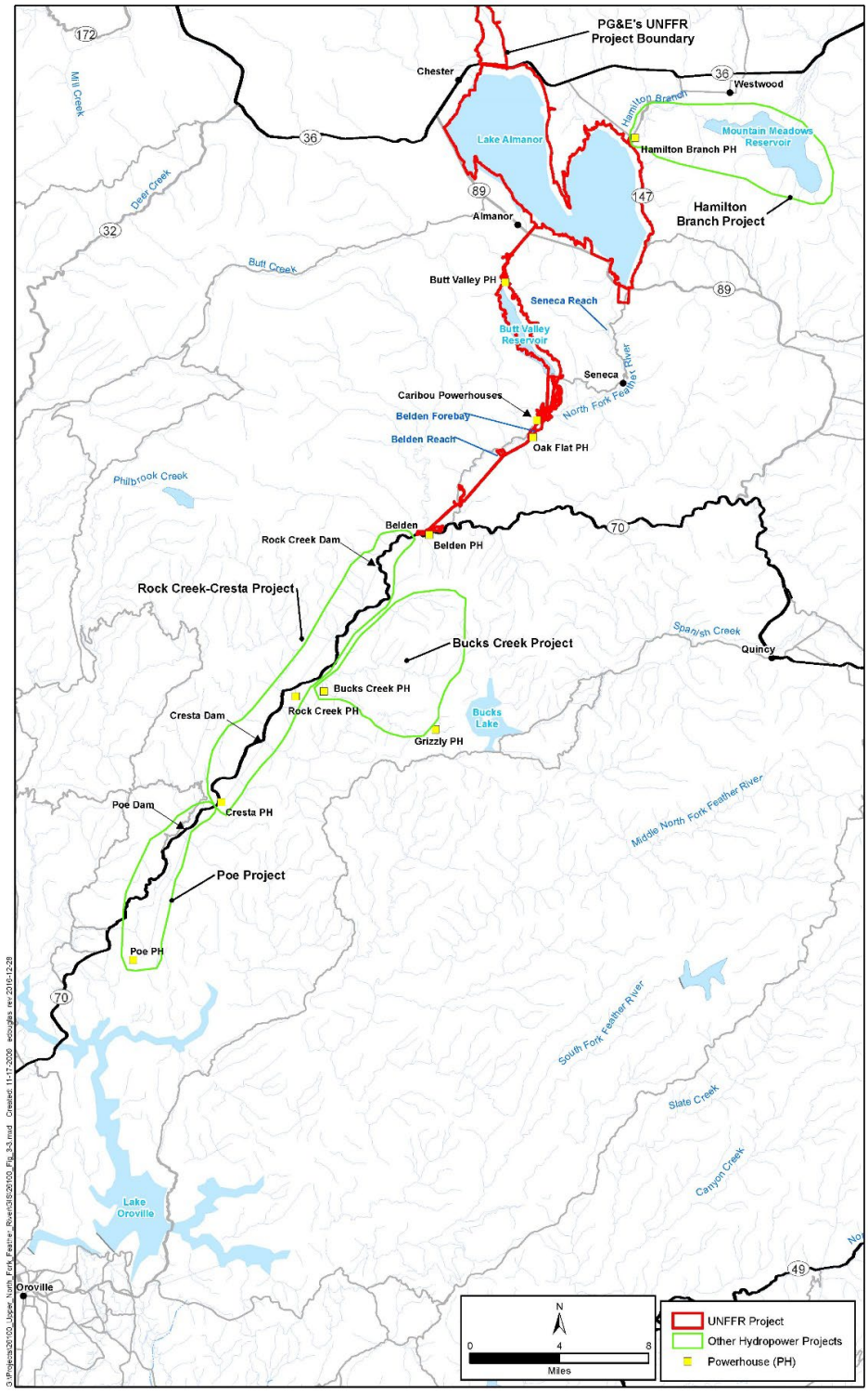

Figure 2. Hydroelectric Projects on the North Fork Feather River

Attachment B
Upper North Fork Feather River Hydroelectric Project Facilities Description

Below is a brief overview of the Upper North Fork Feather River Hydroelectric Project (Project) facilities and general information about how water moves through the Project.

In general water associated with the Project moves from Lake Almanor into either the: (1) North Fork Feather River below Canyon Dam; or (2) Butt Valley Reservoir via the Prattville Intake. Below is a brief overview of how water moves through the two parts of the Project.

> North Fork Feather River below Canyon Dam. Water leaving Lake Almanor through Canyon Dam travels into the Seneca Reach of the North Fork Feather River where it travels into Belden Forebay.
>
> Butt Valley Reservoir via Prattville Intake. Water leaving Lake Almanor through the Prattville Intake travels to the Butt Valley Powerhouse and discharges into Butt Valley Reservoir. From Butt Valley Reservoir water travels through the two Caribou Powerhouses where it discharges into Belden Forebay.

From Belden Forebay water travels through a tunnel to the Belden Powerhouse, which is located on the North Fork Feather River near Yellow Creek, or through the Oak Flat Powerhouse, which is located at the base of Belden Dam. Power generated from the three powerhouses is distributed via three transmission lines. The main facilities associated with the Project are briefly described below.

Lake Almanor

Lake Almanor is the highest elevation reservoir in the Project and has the largest usable storage capacity (1,134,016 acre-feet (AF)). The North Fork Feather River contributes approximately half the surface water inflow to Lake Almanor, with another quarter of inflow coming from the Hamilton Branch of the North Fork Feather River. The rest of reservoir inflow is from smaller tributaries and submerged freshwater springs. The surface area of Lake Almanor at maximum capacity is approximately 27,000 acres, and the maximum normal water surface elevation is 4,494 feet (PG&E elevation datum). The average depth of Lake Almanor is approximately 40 feet with an average hydraulic residence time of 291 days.

Canyon Dam

Lake Almanor is impounded to the south-west by Canyon Dam, an earthen dam constructed in 1914 and subsequently raised in 1927 and 1963. Canyon Dam is 135-feet-high by 1,250-feet-wide at the dam crest and 1,400-feet-wide at the toe. Canyon Dam releases water into the Seneca Reach of the Project through the Canyon Dam outlet tower (outlet tower). The outlet tower has five active release gates and two former gates buried below the reservoir floor. The outlet tower has a maximum capacity of approximately 2,100 cubic feet per second (cfs).

Prattville Intake

The Project drafts most of its water from the Prattville Intake on the west shore of Lake Almanor. The 124-foot concrete Prattville Intake tower includes auxiliary safety features such as exclusionary fences, warning signs, and buoys. The elevation of the Prattville Intake is 4,436 feet (PG&E elevation datum).

Butt Valley Powerhouse

Water diverted through the Prattville Intake travels 10,899 feet through Prattville Tunnel No. 1A, then 5,568 feet through the Butt Valley Powerhouse penstock before discharging through the Butt Valley Powerhouse into Butt Valley Reservoir. Butt Valley Powerhouse has a hydraulic capacity of 2,118 cfs and an installed capacity of 41 megawatts (MW).

Butt Valley Reservoir

Butt Valley Reservoir is located southwest of Lake Almanor on Butt Creek and has a surface area of 1,600 acres. Butt Valley Reservoir is created by Butt Valley Dam and has a usable storage capacity of 49,897 AF. Most inflow to Butt Valley Reservoir is from Lake Almanor via the Prattville Intake, and the average hydraulic residence time is two weeks.

Caribou Powerhouses

Caribou No. 1 and No. 2 powerhouses are located on Belden Forebay, directly downstream of the Seneca Reach. Caribou No. 1 Powerhouse includes three 30,000-horsepower, double overhung impulse turbines with 11.5-kilovolt (kV) generators. The total installed capacity of the units is 75 MW. The generating units are connected to a 90,000-kilovolt ampere (kVA) transformer bank that steps up the voltage from 11.5 kV to 115 kV for transmission, and the output can also be tied to the Caribou No. 2 development through a 56,000-kVA autobank. Caribou No. 2 Powerhouse has two 76,000-horsepower, 6-jet vertical shaft impulse turbines with 13.8-kV generators. The total installed capacity of the units is 120 MW. The generating units are connected to a 137,800-kVA transformer bank that steps up voltage from 13.8 to 230 kV for transmission. Water passed through the Caribou No. 1 and No. 2 powerhouses is drawn from Butt Valley Reservoir and discharged into Belden Forebay.

Belden Forebay

Belden Forebay is 42 acres in size with a maximum useable storage of 2,421 AF. Belden Forebay is impounded by Belden Dam and primarily receives inflows from the Caribou No. 1 and No. 2 powerhouses and the Seneca Reach of North Fork Feather River. Belden Forebay is primarily used for re-regulating, which causes the forebay elevation to swing up to 10 feet when the Project is drafting out of Lake Almanor.

Oak Flat Powerhouse

Oak Flat Powerhouse is located at the base of Belden Forebay Dam and has a single 1,837-horsepower, horizontal shaft Francis turbine with a 1,628-kVA generator. The Oak Flat Powerhouse generates power from the minimum instream flow release from Belden Forebay and has an installed capacity of 1.3 MW. The generating unit is connected to a 2,001-kVA transformer bank, which connects to a local distribution line.

Belden Powerhouse

Belden Powerhouse is located approximately 8.8 miles downstream of Belden Forebay on the North Fork Feather River near Yellow Creek. The powerhouse contains a single 158,000-horsepower, vertical shaft Francis turbine with a 13.8-kV generator. The generator unit has an installed capacity of 125 MW. Water passed through Belden Powerhouse is drawn from Belden Forebay and discharged to Yellow Creek immediately upstream of its confluence with the North Fork Feather River.

Transmission Facilities

Three transmission lines convey power generated by the five Project powerhouses to substations in the area. A 7.4-mile-long line from Butt Valley to the Caribou No. 1 and No. 2 powerhouses has the capacity to transmit 230 kV, but currently operates at 115 kV. A 12-kV tap line carries power from the Oak Flat Powerhouse to a local distribution line. A 115-kV transmission circuit extends 38.2 miles from the Caribou No. 1 and No. 2 powerhouses to the Big Bend substation.

Attachment C
References

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