State Water Resources Control Board

November 3, 2022

Ms. Laura Hazlett, Chief Operating Officer
Klamath River Renewal Corporation
Email: lhazlett@klamathrenewal.org

Lower Klamath Project License Surrender
Federal Energy Regulatory Commission Project No. 14803
Siskiyou County
Klamath River and associated tributaries

AMENDMENT TO WATER QUALITY CERTIFICATION FOR LOWER KLAMTH PROJECT LICENSE SURRENDER

Dear Ms. Hazlett:

This water quality certification (certification) amendment is issued in response to the Klamath River Renewal Corporation's (KRRC or Licensee) September 23, 2022 request for modifications. These amendments:

- Account for updates to the Lower Klamath Project License Surrender (Project) since the original Project certification was issued on April 7, 2020, as described in subsequent FERC filings and the request for certification amendment;
- Approve plans required by the certification that have been developed since April 2020; and
- Provide consistency with the actions analyzed and recommended in the Federal Energy Regulatory Commission's (FERC's) environmental impact statement (EIS), including incorporation of FERC staff's recommended modifications (EIS, Section 2.2.)

Background

The Project primarily consists of the decommissioning and removal of four dams (J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate) and their associated facilities on the mainstem of the Klamath River as well as restoration activities. The existing Project facilities are located on the Klamath River in Siskiyou County, California and Klamath County, Oregon. The nearest city to the California portion of the Project is Yreka, which is located approximately 20 miles southwest of the downstream end of the Project. The purpose of the Project is to decommission four dams on the Klamath River to achieve a free-flowing Klamath River that allows for volitional fish passage.

On April 7, 2020, the State Water Board issued a certification for the Project. Since issuance of the certification, the KRRC has revised the Project and developed many of the plans required by the certification, in coordination with state, federal, local, and tribal agencies and other stakeholders. On September 23, 2022, the KRRC submitted a request to the State Water Board for an amendment to the Project certification. Since issuance of the certification, the KRRC has revised its engineering design to: refine Project actions, including the reservoir drawdown schedule; minimize impacts to environmental and cultural resources; and enhance cost-effectiveness and safety of the Project.

California Environmental Quality Act

Issuance of a certification amendment is a discretionary action under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). As the CEQA lead agency, the State Water Board approved the *Final Environmental Impact Report for the Lower Klamath Project License Surrender* (State Clearinghouse No. 2016122047) for the Project on April 7, 2020. On August 26, 2022, FERC issued the Final Environmental Impact Statement for Hydropower License Surrender and Decommissioning for the Lower Klamath Project (FERC Project No. 14803-001) in compliance with the National Environmental Policy Act of 1969. (42 U.S.C. Sec. 321 et seq.) Under Public Resources Code, section 21166.2, the environmental review set forth in the State Water Board's April 2020 final environmental impact report, in combination with FERC's August 2022 final environmental impact statement satisfy the CEQA requirements for this Project. These documents were reviewed and considered in approving the proposed certification amendment.

The State Water Board in its independent judgement, has updated and hereby adopts the April 7, 2020 CEQA findings and statements of overriding considerations (Attachment 3), and the mitigation, monitoring, or reporting program (Attachment 4) based on FERC's NEPA analysis.

The State Water Board will file a Notice of Determination with the Office of Planning and Research within five days of issuance of this certification amendment. (Cal. Code Regs., title 14, § 15075.)

The State Water Board will also file this document with federal agencies (Federal Energy Regulatory Commission, United States Army Corps of Engineers, and United State Environmental Protection Agency). The CEQA documents (Attachments 3 and 4) are provided for informational purposes.

Noticing

On October 13, 2022, the State Water Board provided public notice of the KRRC's request for an amendment to the Project certification, pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the amendment request on the Division of Water Rights Water Quality Certification Program Public Notices webpage and noticing the "Water Rights Water Quality Certification" and "Lower Klamath Project License Surrender" email subscription lists.

Amendment Approval
The State Water Board finds that the Proposed Project will comply with state water quality standards and other appropriate requirements of state law under the amended conditions of certification in Attachment 1A (clean version) and Attachment 1B (strikethrough/underline version). Attachment 2 provides additional detail regarding the reasoning for the changes to the conditions from the certification issued in 2020. The State Water Board hereby amends the specified Project certification conditions to the language in Attachment 1A.

Approval of this Project certification amendment is granted with the following conditions:

(1) This certification amendment is subject to modification or revocation upon administrative or judicial review, including 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).
(2) This certification amendment 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 certification application was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
(3) This certification amendment is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28 and owed by the applicant.

If you have questions regarding this certification amendment, please contact Philip Meyer, Project Manager, by email at Philip.Meyer@waterboards.ca.gov.

Sincerely,

Eileen Sobeck
Executive Director

Attachments:

Attachment 1A:	Lower Klamath Project License Surrender Certification Amendment (Clean Version)
Attachment 1B:	Lower Klamath Project License Surrender Certification Amendment (Strikethrough/Underline Version)
Attachment 2:	Lower Klamath Project License Surrender Water Quality Certification Amendment – Discussion of Amendments
Attachment 3:	Amended CEQA Findings and Statements of Overriding Considerations for the Lower Klamath Project License Surrender
Attachment 4:	Amended Mitigation, Monitoring, or Reporting Program for the Lower Klamath Project License Surrender

ec (with attachments): Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Filed via FERC Docket for Project No. 14803

Ms. Diane Barr, Principal Regulatory Specialist
Camas Environmental Regulatory Professionals
Email: diane@camasllc.com

Mr. Matthias St. John, Executive Officer
North Coast Regional Water Quality Control Board
Email: Matt.St.John@waterboards.ca.gov

Kasey Sirkin
United States Army Corps of Engineers
Email: L.K.Sirkin@usace.army.mil

Mr. Tomas Torres, Director
U.S. Environmental Protection Agency, Region 9
Water Division
Email: R9cwa401@epa.gov

cc (w/o attachments): Interested Parties List

Attachment 1A: Lower Klamath Project License Surrender
Water Quality Certification Amendment,
Federal Energy Regulatory Commission Project No. 14803
(Clean Version)

The State Water Resources Control Board hereby amends the water quality certification for the Klamath River Renewal Corporation's (KRRC) Lower Klamath Project License Surrender (Project) to modify Conditions 1 – 19, 22, and 24.

CONDITION 1. WATER QUALITY MONITORING AND ADAPTIVE MANAGEMENT

The Licensee shall submit the California Water Quality Monitoring Plan (WQMP) for review and approval by the Executive Director of the State Water Resources Control Board (State Water Board) or the Deputy Director for the Division of Water Rights (Deputy Director) no later than six months following issuance of a Federal Energy Regulatory Commission (FERC) license surrender order and prior to Lower Klamath Project License Surrender (Project) implementation.[19] The WQMP shall be developed in consultation with staff from the State Water Board, North Coast Regional Water Quality Control Board (North Coast Regional Board), Oregon Department of Environmental Quality (ODEQ), and California Department of Fish and Wildlife (CDFW). The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved revisions to the WQMP, together with any required plan modifications not incorporated into a water quality certification amendment, with FERC. Any changes to WQMP shall be approved by the Deputy Director prior to implementation. Upon receiving all necessary approvals, the Licensee shall implement the WQMP for the duration of the license surrender order or until otherwise approved by the Deputy Director in writing. The Deputy Director may require modifications to the WQMP, including implementation of additional adaptive management measures informed by monitoring results, as part of review and approval of reports as specified below.

At a minimum, the WQMP shall include: (1) a monitoring program to assess Project impacts to water quality; (2) a reporting schedule; (3) adaptive management measures based on water quality monitoring results; and (4) provisions for collection and submittal of water quality data to inform the Licensee's implementation of a water quality compliance schedule (Condition 2). Additionally, the WQMP shall describe: field sampling and analytical methods; monitoring locations; types of sampling (e.g., continuous, grab) and frequency by the category (as enumerated below); pre-drawdown monitoring; quality assurance plan and quality control measures; sediment load quantification; reporting and adaptive management; and other Project-related monitoring.

Field Sampling and Analytical Methods

The Licensee shall implement field sampling and monitoring methods consistent with the State of California's Surface Water Ambient Monitoring Program or equivalent methods approved by the Deputy Director. The Licensee shall use analytical methods that comply with Code of Federal Regulations, title 40, part 136, or methods approved by California's Environmental Laboratory Accreditation Program (ELAP), where such

[19] The KRRC submitted the California Water Quality Monitoring Plan for approval as part of its request for an amendment of the Project water quality certification.

methods are available. Samples that require laboratory analysis shall be analyzed by ELAP-certified laboratories.

Types of Sampling and Frequency by Category

At a minimum, the WQMP shall identify the parameters and sampling frequency[~~19~~**20**] for the three categories of sampling outlined below. Water quality monitoring shall be implemented at the noted frequency or more often.

Category 1: Continuous Water Quality Monitoring

The Licensee shall continuously monitor the following water quality parameters:

(1) dissolved oxygen (DO) in milligrams per liter (mg/L) and percent saturation;
(2) water temperature;
(3) turbidity;
(4) conductivity; and
(5) pH.

Category 1 Frequency: At a minimum, 30-minute interval recordings.

Category 2: Water Quality Grab Samples

The Licensee shall collect and analyze water quality grab samples for the following parameters:

(1) total nitrogen;
(2) nitrate;
(3) nitrite;
(4) ammonia
(5) total phosphorus;
(6) particulate organic phosphorus;
(7) orthophosphate;
(8) particulate organic carbon;
(9) dissolved organic carbon;
(10) chlorophyll-a (beginning May 1 following drawdown activities and continuing annually from May 1 through October 31);
(11) turbidity;
(12) microcystin (beginning May 1 following drawdown activities and continuing annually from May 1 through October 31);
(13) suspended sediment concentrations;
(14) methylmercury (only at Klamath River monitoring locations below Copco No. 1);
(15) settleable solids; and
(16) particulate and dissolved aluminum (only at Klamath River monitoring locations below Iron Gate).

[20] See pre-drawdown monitoring below for minimum monitoring frequency prior to drawdown.

Category 2 Frequency: At a minimum, monthly (with the exception of suspended sediment concentrations), at approximately the same time of day, during and following drawdown. For suspended sediment concentrations, monitoring shall occur every two weeks.

Category 3: Klamath Riverbed Sediment Grab Samples

The Licensee shall collect and analyze sediment samples from the Klamath Riverbed prior to and following dam decommissioning. At a minimum, sediment samples shall be analyzed for the following parameters:

(1) arsenic;
(2) lead;
(3) copper;
(4) nickel;
(5) iron;
(6) aluminum;
(7) dioxin;
(8) cyanide;
(9) mercury;
(10) ethyl benzenes;
(11) total xylenes;
(12) dieldrin;
(13) 4,4'-dichlorodiphenyltrichloroethane (DDT);
(14) 4,4'-dichlorodiphenyldichloroethane (DDD);
(15) 2,3,7,8-tetrachlorodibenzodioxin (TCDD);
(16) 4,4'-dichlorodiphenyldichloroethylene (DDE); and
(17) 2,3,4,7,8-pentachlordibenzofuran (PECDF).

Category 3 Frequency: One monitoring event prior to drawdown activities[21] and one event within 12 to 24 months of completing drawdown activities.

Monitoring Locations (Categories 1 through 3)

The Licensee shall consider the following when selecting monitoring locations: existing water quality monitoring stations in the Klamath River Basin, site access, land use, and input received during consultation. Whenever feasible, the Licensee shall select monitoring locations at or near existing water quality monitoring locations. At a minimum, the Licensee shall monitor at the following locations:

[21] In lieu of collecting additional pre-drawdown [in-reservoir] samples, the Licensee may rely on the results of previously-analyzed sediment samples, to the extent they provide the necessary information.

Category 1 (Continuous Water Quality Monitoring) and Category 2 (Water Quality Grab Samples[22]) shall be conducted at the following locations:

- Klamath River at or near United State Geological Survey (USGS) gage no. 11509500 (below Keno)
- Klamath River at or near USGS gage no. 11510700 (below J.C. Boyle)
- Klamath River upstream of Copco No. 1 Reservoir, and downstream of Shovel Creek (Category 2 only);
- Klamath River downstream of Copco No. 2 Powerhouse, no further downstream than the Daggett Road bridge crossing of the Klamath River;
- Klamath River at or near USGS gage no. 11516530 (below Iron Gate);
- Klamath River at or near Walker Bridge (Category 1 monitoring only);
- Klamath River at or near USGS gage no. 11520500 (below Seiad Valley);
- Klamath River at or near USGS gage no. 11523000 (Orleans);
- Klamath River at or near USGS gage no. 11530500 (Klamath); and
- Klamath Estuary near the mouth of the Klamath River.

Category 3 (Klamath Riverbed Sediment Grab Samples) shall be collected at the following locations[23]:

- Klamath River upstream of Copco No. 1 Reservoir and downstream of Shovel Creek;
- Three locations in the Copco No. 1 Reservoir footprint, in areas where sediments will likely be terraced. If terracing does not occur at the previously sampled location, the sample location shall be moved to a location with terraced sediments;
- Klamath River downstream of Copco No. 2 Powerhouse, no farther downstream than the Daggett Road bridge crossing of the Klamath River;
- Three locations in the Iron Gate Reservoir footprint, in areas where sediments will likely be terraced. If terracing does not occur at the previously sampled location, the sample location shall be moved to a location with terraced sediments;
- Klamath River at or near USGS gage no. 11516530 (below Iron Gate);
- Klamath River at or near USGS gage no. 11523000 (Orleans); and
- Klamath Estuary.

Pre-Drawdown Monitoring (Categories 1 through 3)

At a minimum, prior to drawdown activities the Licensee shall monitor as follows:

- Category 1 (Continuous Water Quality Monitoring): One year of continuous monitoring at all Category 1 monitoring locations.

[22] Samples shall be collected at the same location, or as close as possible, each time.

[23~~22~~] Samples shall be collected at the same location, or as close as possible, each time. Locations should target slow-velocity depositional areas (eddies and backwaters) where fine sediment accumulation is most likely to occur.

- Category 2 (Water Quality Grab Samples): One year with samples collected monthly, at all Category 2 monitoring locations.
- Category 3 (Klamath Riverbed Sediment Grab Samples): One collection event at all Category 3 monitoring locations, except as specified in Footnote 21.

Quality Assurance Project Plan

The Licensee shall develop a Quality Assurance Project Plan (QAPP) using the State Water Board's and United States Environmental Protection Agency's (USEPA's) guidance resources to describe the Project's monitoring goals, data needs and assessment, responsible individuals, quality assurance plan, equipment maintenance, quality control measures, and reporting deadlines. The QAPP shall be submitted as part of the WQMP.

Sediment Load Quantification

The Licensee shall submit reports to the Deputy Director describing the status of sediment movement at 12 and 24 months, respectively, following completion of drawdown activities. The reports shall: (a) quantify the amount of sediment present in each Project reservoir footprint; (b) quantify the total amount of sediment exported from the Project reservoirs; (c) quantify the amount of sediment that has settled in the Klamath River between Iron Gate Dam and Cottonwood Creek (River Mile[24]~~23~~ [RM] 185); and (d) describe remediation activities planned or undertaken, if any. For (a) and (b) estimates shall be provided in million cubic yards, tons (dry weight), and percentage of sediment present compared to total amount of sediment present prior to drawdown. For (c) estimated sediment deposition shall be presented as total estimated quantities in million cubic yards, tons (dry weight), average depth change from pre-drawdown conditions, and percent particle size composition. The reports shall be submitted to the Deputy Director at 15- and 27-months following completion of drawdown activities, respectively.

Reporting and Adaptive Management: Prior to, during, and for a minimum of one year following completion of drawdown, the Licensee shall provide monthly monitoring reports to the State Water Board, ODEQ, and North Coast Regional Board. Monitoring and monthly reporting shall continue until otherwise approved by the Deputy Director in writing. The monthly report shall, at a minimum: 1) summarize the results of the month's monitoring; 2) be provided in a Microsoft Excel spreadsheet format and include all data collected during the reporting period; 3) highlight any exceedances of water quality objectives; 4) highlight observed trends; 5) request any changes to the WQMP; and 6) report on any adaptive management measures taken and propose any additional or substitute adaptive management measures to address exceedances. Any proposal to modify, reduce, or discontinue monitoring and reporting shall be included in the reports with a request for Deputy Director approval and must include information to support the request. Such requests must also comply with Tribal Water Quality Standards (Condition 22). Modifications to the WQMP or additional or substitute

[24] River Mile (RM) refers to the distance, along the Klamath River, upstream from the mouth of the Klamath River at the Pacific Ocean.

adaptive management measures requested by the Licensee require Deputy Director approval prior to implementation.

As noted in the Sediment Load Quantification section above, at 15 months and 27 months following completion of drawdown activities, the Licensee shall submit the reports describing the status of sediment movement.

Based on monitoring results, the Deputy Director may require the Licensee to modify monitoring parameters, frequency, methods, duration, constituents, reporting, or other elements of the WQMP, or to implement additional adaptive management measures. The Licensee shall implement changes upon receiving Deputy Director and any other required approvals. The Licensee shall file the Deputy-Director-approved updates to the WQMP with FERC. The Licensee may integrate the reporting in this condition with other reporting requirements outlined in this water quality certification (certification).

Other Project-Related Monitoring

The WQMP shall identify other monitoring efforts the Licensee plans to conduct under other plans or aspects of the Project, which include, but are not limited to monitoring under the following conditions: Sediment Deposits (Condition 4); Public Water Supplies (Condition 8); Construction: General Permit Compliance, and Water Quality Monitoring and Protection Plans (Condition 10); Hatcheries (Condition 13); and Recreation Facilities (Condition 19).

The October 2022 California Water Quality Monitoring Plan and October 2022 Quality Assurance Project Plan submitted by the KRRC to the State Water Board on October 10, 2022, satisfy the plan requirements of this condition and are hereby approved with the following modification:

- The WQMP shall be modified to include a suspended sediment load quantification methodology: A minimum of six months prior to implementing drawdown activities, the Licensee shall submit to the Deputy Director for review and approval a methodology to quantify sediment export during and following reservoir drawdown using suspended sediment concentrations and flow measurements recorded at six USGS gage locations[25]. The Deputy Director may require modifications as part of any approval.

  Any changes to the sediment load quantification methodology shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modification as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. Upon receiving all necessary approvals, the Licensee shall implement the sediment load quantification methodology until otherwise approved by the Deputy Director in writing.

  Unless otherwise approved by the Deputy Director, the Licensee shall quantify and report suspended sediment loads in the monthly reports required by the

[25] Gage Nos. 11509500, 11510700, 11516530, 11520500, 11523000, and 11530500.

WQMP. The Deputy Director may require modifications to the suspended sediment load quantification methodology based on reporting information.

CONDITION 2. COMPLIANCE SCHEDULE

Project activities related to drawdown and the export of reservoir sediments into the Klamath River are anticipated to result in temporary exceedances of water quality objectives related to sediment. Temporary exceedance of a water quality objective is permissible for restoration projects with long-term benefits to water quality and beneficial uses. Pursuant to this certification, discharges to the Klamath River that exceed sediment-related water quality objectives can temporarily occur during and following reservoir drawdown, dam removal, and associated sediment flushing activities. The Licensee shall demonstrate that, in the long term, these Project activities attain all sediment-related water quality objectives listed in *the Water Quality Control Plan for the North Coast Region* (North Coast Basin Plan) as outlined in this condition. Implementation of this condition shall also serve to demonstrate compliance with North Coast Basin Plan prohibitions.

The Licensee shall monitor water quality consistent with Water Quality Monitoring and Adaptive Management (Condition 1) to assess attainment of water quality objectives listed in the North Coast Basin Plan. Within 36 months of beginning drawdown, unless otherwise approved by the Deputy Director in writing, the Licensee shall submit a report that documents: 1) Project attainment of sediment-related water quality objectives over a range of flows, including high winter flows and low summer flows; and 2) post-dam removal Klamath River water quality conditions following attenuation of impacts associated with drawdown and establishment of new riverine conditions.

The Licensee shall document changes in water quality following drawdown and assess trends in water quality parameters. The Licensee's report shall evaluate the Project's effects on all California portions of the Klamath River (i.e., from California/Oregon Stateline to Klamath Estuary), including attainment of: (i) numeric water quality objectives outlined in Table 1; and (ii) narrative water quality objectives in the North Coast Basin Plan. Outlier exceedances that are localized or isolated may be accepted if the Project is consistently in attainment with water quality standards. Localized or isolated exceedances may be addressed through adaptive management associated with Restoration (Condition 14) or other measures proposed by the Licensee. If data indicate that a water quality objective is exceeded and the Licensee believes the exceedance is not a result of Project activities, the Licensee shall provide information and support demonstrating that the exceedance is not related to Project activities. The Deputy Director will consider the information provided by the Licensee in evaluating the Licensee's attainment of water quality objectives.

Attachment 1A: Lower Klamath Project License Surrender Water Quality Certification Amendment (Clean Version)

Table 1: Minimum Parameters to Demonstrate Attainment of Numeric Water Quality Objectives

Parameter	Water Quality Objective*
Turbidity	Turbidity shall not be increased more than 20% above naturally occurring background levels.
pH	pH shall be between 7.0 (minimum) and 8.5 (maximum). Changes in normal ambient pH levels shall not exceed 0.2 units in waters designated marine or saline beneficial uses nor 0.5 units within the range specified above in fresh waters with designated COLD** or WARM***.
Dissolved Oxygen (percent saturation)	Stateline to the Scott River: • October 1 to March 31: 90% • April 1 to September 30: 85% Scott River to Hoopa: • All year: 90% saturation Downstream of Hoopa to Turwar: • June 1 to August 31: 85% • September 1 to May 31: 90% Upper and Middle Estuary: • September 1 to October 31: 85% • November 1 to May 31: 90% • June 1 to July 31: 85% • August 1 through August 31: 80%
Temperature	Elevated temperature waste discharges into COLD** interstate waters are prohibited. Thermal waste discharges having a maximum temperature greater than 5°Fahrenheit above natural receiving water temperature are prohibited. At no time or place shall the temperature of WARM*** intrastate water be increased more than 5°Fahrenheit above natural receiving water temperature.
Specific Conductance	Klamath River above Iron Gate Dam and including Iron Gate and Copco Reservoirs: • 275 micromhos (50% upper limit)****; and • 425 micromhos (90% upper limit)***** Middle Klamath River below Iron Gate Dam: • 275 micromhos (50% upper limit); and • 350 micromhos (90% upper limit) Lower Klamath River: • 200 micromhos (50% upper limit); and • 300 micromhos (90% upper limit)

* Naturally occurring background levels, for the purpose of numeric water quality objectives in Table 1, are defined as the post-dam-removal condition of the Klamath River with successful implementation of revegetation and bank stabilization. It does not include discharges from construction or restoration activities, including failures of vegetation and/or bank stabilization.
** COLD is defined as Cold Freshwater Habitat uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
*** WARM is defined as Warm Freshwater Habitat uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
**** 50% upper and lower limits represent the 50 percentile values of the monthly means for the calendar year. 50% or more of the monthly means must be less than or equal to an upper limit and greater than or equal to a lower limit.
***** 90% upper and lower limits represent the 90 percentile values of the monthly means for the calendar year. 90% or more of the monthly means must be less than or equal to an upper limit and greater than or equal to a lower limit.

At 32 months following the beginning of drawdown, the Licensee shall submit an assessment of whether Project activities are anticipated to result in exceedance of a water quality objective(s) beyond 36 months following the beginning of Project drawdown. The assessment shall be submitted to the Deputy Director and the Executive Officer of the North Coast Regional Board (Executive Officer), and consistent with Tribal Water Quality Standards (Condition 22). If the assessment indicates a high risk of continued exceedance beyond this timeline, the Licensee shall immediately commence consultation with staff from the State Water Board and North Coast Regional Board regarding the development of a report and compliance proposal for actions to address the anticipated exceedance(s). The report and proposal shall be submitted to the Deputy Director for review and approval no later than 35 months following the beginning of Project drawdown activities and shall at a minimum include:

- A summary of which water quality objective(s) and compliance location(s) continue to exceed a water quality objective(s);
- An explanation of why the water quality objective(s) continues to be exceeded in relation to Project activities;
- A description of Licensee actions taken to date to address the exceedance(s); and
- A proposal to address the water quality objective(s) exceedance and associated timeline for attainment of compliance with the water quality objective(s).

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the compliance plan upon receiving Deputy Director and any other required approvals. Any changes to the compliance plan shall be approved by the Deputy Director prior to implementation.

If the Licensee is unable to demonstrate attainment of water quality objectives within 36 months of beginning Project drawdown activities, the Licensee shall notify the

Deputy Director and immediately begin implementation of the approved compliance proposal, or the approved portions of the proposal if the entire proposal has not yet been approved.

CONDITION 3. RESERVOIR DRAWDOWN

No later than six months following issuance of the FERC license surrender order, the Licensee shall prepare and submit a Reservoir Drawdown and Diversion Plan (Drawdown Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval.

At a minimum, the Drawdown Plan shall include:

(1) The material elements of the drawdown plan in the November 2020 Definite Decommissioning Plan filed with FERC;
(2) A description of the facilities that will be used to draw down the reservoirs;
(3) An updated flood frequency analysis and associated average flows;
(4) Anticipated drawdown rates for each reservoir. The drawdown rate for each reservoir shall be determined using best available science and consider any potential slope instability issues;
(5) Drawdown scenarios for different water years (e.g., wet, dry, etc.);
(6) Construction schedule, including anticipated schedule for drawdown, and each reservoir's anticipated drawdown start and end dates;
(7) Anticipated total (drawdown and inflow) and drawdown only discharge rates (cubic feet per second [cfs]) associated with each structure (e.g., spillways, diversion tunnels, outlets, etc.);
(8) Public notice of Project schedule and potential impacts, including but not limited to closure of reservoirs, recreation facilities, and impacts to water quality;
(9) Surface water elevation at which each reservoir is considered drawn down;
(10) A detailed description of all structures related to reservoir operations that are proposed to be removed during drawdown;
(11) Compliance with cofferdam requirements in this condition, and a detailed description of cofferdams or equivalent barriers that will be installed as part of drawdown that includes locations, timing and duration of installations, and other information related to how the installation and removal of cofferdams or equivalent barriers will be coordinated to limit impacts;
(12) A description of the coordination process with the United States Bureau of Reclamation, National Marine Fisheries Service (NMFS), and United States Fish and Wildlife Service (USFWS) for any potential operation changes to the Klamath Irrigation Project needed to implement the Project;
(13) Detail on how long Project powerhouses are anticipated to be operational during drawdown of the reservoirs;
(14) An overview of the sequence of drawdown activities for all four reservoirs, including a detailed sequence of how drawdown activities will be implemented at each reservoir; and
(15) A discussion of drawdown criteria, drawdown and diversion procedures, alternative drawdown procedures, drawdown monitoring plans, and drawdown implementation plans.

Construction areas in active streams shall use cofferdams, construction pads, or equivalent barriers to isolate construction areas from instream flows. Instream water shall be routed around the isolated construction area either by pipe or by isolating the stream in phases so that construction does not impede stream flow around the construction area. In addition, all dewatering pump intakes shall be screened to avoid potential impacts to fish and all bypass routes (e.g., pipelines, outlets, etc.) shall be properly removed or sealed upon completion of Project activities unless otherwise approved by the Deputy Director as part of review and approval of the Drawdown Plan. Any fish entrained by a Project cofferdam shall be safely relocated.

The Licensee shall notify the Deputy Director, in writing, within 24 hours of initiation and conclusion of drawdown activities at each reservoir. The Licensee shall notify the Deputy Director within 72 hours of knowledge that reservoir drawdown has the potential to be delayed or extended while still meeting the requirements outlined in this certification. The notification shall include the reason for the delay or extension and a proposed revised drawdown schedule that complies with this condition. The Deputy Director may require modifications to the proposed revised drawdown schedule. Development of a proposed revised drawdown schedule shall include consultation with State Water Board staff.

The California Reservoir Drawdown and Diversion Plan, dated July 2022, submitted by the KRRC to the State Water Board on July 28, 2022, as amended by the KRRC's October 10, 2022, supplemental filing, satisfy the Drawdown Plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any future changes to the Drawdown Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any such Deputy Director-approved updates to the Drawdown Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Drawdown Plan upon receipt of all required approvals.

Pre-drawdown and drawdown activities described in the Drawdown Plan that could impact water quality (e.g., building the access construction pads below the spillway, dredging the low-level outlet tunnel approach channel at Copco 1, cleaning and exercising the Iron Gate diversion gate) shall be covered by a Deputy Director-approved site-specific water quality monitoring and protection plan(s) as defined in Condition 10 of this certification. The Licensee shall comply with Condition 10 requirements for construction-related pre-drawdown and drawdown work with the potential to impact water quality.

Removal of the Project facilities shall begin and be completed, to the extent feasible, during drawdown to minimize the duration of sediment releases, and to comply with the schedule set forth in the Compliance Schedule (Condition 2) of this certification.

Additionally, drawdown and dam deconstruction shall be conducted to ensure instream flow requirements[26] below Iron Gate Dam are maintained.

CONDITION 4. SEDIMENT DEPOSITS

Unless otherwise approved in writing by the Deputy Director, by no later than December of the second full calendar year following completion of drawdown activities, the Licensee shall assess and remediate (if appropriate) visibly obvious sediment deposits along the Klamath River from below Iron Gate Dam to the mouth of the Klamath Estuary that may have been deposited during reservoir drawdown activities. Assessment is limited to sediment deposits on parcels with a current or potential residential or agricultural (e.g., row crop) land use, for which the property owner has notified the KRRC of a potential sediment deposit that may be associated with reservoir drawdown activities.

Within 60 days of property owner notification, visibly obvious sediment deposits shall be assessed by the Licensee to determine if the deposits are consistent with physical sediment properties associated with Project reservoir sediments. Sediment deposits consistent with the physical sediment properties of Project reservoirs shall be tested for arsenic or remediated without testing per the requirements of this condition. If testing is performed, soil samples in the vicinity of the deposited sediments (e.g., from the adjacent riverbank and/or floodplain), shall also be tested for arsenic to determine the local background arsenic concentrations. No additional actions or remediation shall be required if the measured arsenic concentrations in the deposited sediments are less than or equal to measured local background soil concentrations for arsenic. If the concentration of arsenic in the deposited sediments on the river banks and floodplain of the Klamath River exceed local background levels and USEPA or California Environmental Protection Agency human health residential screening levels, the deposited sediments shall be remediated to local background levels through removal of the deposited sediments or soil capping, if sediment removal is infeasible or poses a greater risk than soil capping.

For Sediment Deposits that Require No Further Action. Within 30 days of a determination that a reported deposit does not require remediation, either because it is not consistent with reservoir sediment deposits or because sediment testing does not indicate a need for further action, the Licensee shall notify the property owner and submit a report to the Deputy Director. At a minimum, the report shall include the location of the reported deposit, a summary of actions taken, and support for the determination that no further action is needed. If sampling was performed, the report shall also include, at a minimum:

- Estimated quantity of the reported sediment deposit;

[26] The United States Bureau of Reclamation's (USBR) Klamath River Project must meet flows below Iron Gate Dam that are required under the Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act essential fish habitat requirements. Drawdown shall not interfere with implementation of the required instream flow requirements that are current at this time.

- Arsenic testing method(s) used and the number, location, and depth of samples collected from the reported sediment deposit and surrounding soils (background); and

- Arsenic concentrations associated with each sample.

The Deputy Director may require additional testing, remediation, or other actions based on the report. The Licensee shall provide additional information upon request by the Deputy Director.

For Sediment Deposits that Require Further Action. Within 14 days following completion of the inspection of a reported sediment deposit that requires further action (including any associated sediment sampling results), the Licensee shall submit a Sediment Deposit Remediation Plan to the Deputy Director for review and approval. At a minimum, the Sediment Deposit Remediation Plan shall include:

- Estimated location and quantity of the reported sediment deposit;

- If testing was performed, the arsenic sediment testing methods used and the number, location, depth, and concentration associated with each sediment samples collected from the reported sediment deposit and surrounding soils (background); and

- Proposed remediation actions, including a schedule for remediation and any proposed post-remediation soil sampling. If soil capping is proposed, the Licensee shall provide documentation supporting why soil removal is infeasible or poses a greater risk than soil capping.

Within 30 days of completing remediation activities, the Licensee shall provide the property owner and Deputy Director with a report documenting completion of the remediation. At a minimum, the report shall include the location of the remediation, a summary of action(s) taken including the quantity of soil removed or area capped, and support for the determination that no further remediation is needed. Additionally, if post-remediation soil sampling was performed, the report shall include, at a minimum: arsenic soil testing method(s) used; the number, location, and depth of soil samples collected and their relation to the area remediated; and the associated arsenic soil concentrations.

The Deputy Director may require additional testing, remediation, or other actions based on the report. The Licensee shall provide additional information upon request by the Deputy Director.

The California Sediment Deposit Remediation Plan, dated July 2022, submitted by the KRRC to the State Water Board on July 14, 2022, as amended by the KRRC's October 10, 2022, supplemental filing establishes a framework that incorporates the general requirements of this condition. Any site-specific remediation needed to comply with this condition, as well as any changes to the California Sediment Deposit Remediation Plan, shall be submitted to the Deputy Director for review and approval as

an update to the California Sediment Deposit Remediation Plan. The Deputy Director may require modifications to the California Sediment Deposit Remediation Plan as part of any approval of such an update. The Licensee shall file any Deputy Director-approved updates, together with any required modifications, with FERC. The Licensee shall implement the California Sediment Deposit Remediation Plan upon receipt of all required approvals.

CONDITION 5. ANADROMOUS FISH PRESENCE

The purpose of fish presence surveys is to ensure that following Project implementation anadromous fish can volitionally access the Klamath River and its tributaries within and upstream of the California portion of the Hydroelectric Reach[27]. Accordingly, the Licensee shall conduct surveys to document anadromous fish presence and access to the tributaries and mainstem Klamath River.

No later than 24 months following issuance of a FERC license surrender order, the Licensee shall submit a Fish Presence Monitoring Plan (Fish Presence Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Fish Presence Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, and NMFS.

At a minimum, the Fish Presence Plan shall include: (1) a list of anadromous fish species covered by the plan; (2) California survey reaches; (3) timing, frequency, and duration of surveys; (4) survey methods; and (5) reporting. Additional information on the minimum requirements for each of these plan elements is provided below. Additionally, the Fish Presence Plan may include a discussion of how the information collected under Action 1 (Tributary-Mainstem Connectivity) of the Mainstem Spawning Aquatic Resources Measure (Condition 6) will be used to inform implementation of the Fish Presence Plan.

Fish Species: The Fish Presence Plan shall, at a minimum, include surveys for the following anadromous fish species: spring-run and fall-run Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), Pacific lamprey (*Entosphenus tridentatus*), and steelhead (*Oncorhynchus mykiss*).

California Survey Reaches: Unless otherwise approved by the Deputy Director in writing, the Licensee shall survey, in California, all tributaries with potentially viable anadromous fish habitat that have a confluence in the Hydroelectric Reach, as well as the mainstem Klamath River to the state line to determine if anadromous fish are present. Specific survey reaches of the mainstem Klamath River shall include areas upstream of the California Project reservoir footprints.

[27] The Hydroelectric Reach refers to the stretch of the Klamath River that begins at the confluence of J.C. Boyle Reservoir with the Klamath River and continues to the base of Iron Gate Dam, and includes both J.C. Boyle and Copco No. 2 bypass reaches, and tributaries in this reach such as Jenny Creek, Fall Creek, Spencer Creek, and Shovel Creek.

Timing, Frequency, and Duration: Fish presence surveys shall begin in the fall of the first year following the completion of drawdown. Fish presence surveys shall be conducted for at least four consecutive years and until otherwise approved or modified by the Deputy Director. The Licensee may request to reduce the duration or scope of surveys based on new information (e.g. survey results that substantiate either anadromous fish presence or lack of fish passage barriers related to Project implementation).

Survey Methods: The Licensee shall propose appropriate survey methods (e.g., carcass surveys, snorkel surveys, etc.) to evaluate anadromous fish presence. Information provided shall include: number of days required for surveys with approximate field crew size; equipment that will be used to assess fish presence; global positioning system (GPS) and map of survey areas; field documentation methods (e.g., data sheets, photo documentation); and survey timing. The results of tributary fish presence surveys may be used to determine the need for surveys of the mainstem Klamath River (e.g., anadromous fish present in tributaries above Copco No. 1 Reservoir footprint would indicate anadromous fish can access portions of the mainstem Klamath River below that point, eliminating the need for additional evaluation). A minimum of four weeks prior to conducting fish presence surveys, the Licensee shall notify staff from the State Water Board, North Coast Regional Board, CDFW, and NMFS so that agency staff may participate in the surveys, if desired.

Reporting: The Licensee shall report fish presence survey results annually to the Deputy Director.

Annual reports shall, at a minimum, include:

(1) A summary of the fish presence results; and
(2) An overall assessment of fish presence in the newly accessible Klamath River and tributaries. The Licensee shall consider fish return projections and observations (e.g., barrier) as part of the fish surveys in the reports.

Additionally, the fourth annual report shall, at a minimum, include:

(1) An analysis of whether any encountered fish passage impediment is Project-related; and
(2) Proposed actions to remedy any Project-related impediments to anadromous fish.

The Deputy Director may require the Licensee to submit proposed actions to address a fish passage impediment that the Deputy Director finds is Project-related. Prior to implementing any proposed actions, the Licensee shall receive approval from the Deputy Director. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the action upon receipt of Deputy Director and any other required approvals.

The Fish Presence Monitoring Plan, dated August 2022, submitted by the KRRC to the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this condition and is hereby approved.

The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Fish Presence Monitoring Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy-Director-approved updates to the Fish Presence Monitoring Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Fish Presence Monitoring Plan upon Deputy Director and any other required approvals.

CONDITION 6. AQUATIC RESOURCES

The Licensee shall implement the three Aquatic Resource (AR) measures outlined below and associated plans that are part of the Licensee's Aquatic Resources Management Plan, dated August 2022, as submitted to the State Water Board on August 3, 2022. The Deputy Director may approve, deny, or conditionally approve any changes to the AR Measures proposed by the Licensee.

Mainstem Spawning Aquatic Resource Measure

The Mainstem Spawning AR Measure includes two actions: 1) Tributary-Mainstem Connectivity; and 2) Spawning Habitat Evaluation.

Action 1: Tributary-Mainstem Connectivity. No later than six months following issuance of a FERC license surrender order and prior to Project implementation, the Licensee shall submit the Tributary-Mainstem Connectivity Plan to the Executive Director of the State Water Board or Deputy Director for review and approval. The Tributary-Mainstem Connectivity Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, ODEQ, NMFS, and CDFW.

The Tributary-Mainstem Connectivity Plan shall assess tributary confluences with the Klamath River for connectivity that provides coho salmon, Chinook salmon, steelhead, and Pacific lamprey passage. At a minimum, the Tributary-Mainstem Connectivity Plan shall include: proposed monitoring elements such as methods, timing, duration, frequency, and locations; and proposed reporting. The Tributary-Mainstem Connectivity Plan shall also include a framework to develop adaptive management measures that the Licensee may implement to remove Project-related obstructions to tributary connectivity and fish passage. The Tributary-Mainstem Connectivity Plan shall monitor and address tributary connectivity and fish passage in one tributary[28] in the Hydroelectric Reach and five tributaries from below Iron Gate to Cottonwood Creek.

The Tributary-Mainstem Connectivity Plan shall include monitoring for at least two years directly following the completion of drawdown activities, and within one month following

[28] Additional tributaries in the Hydroelectric Reach will be assessed for connectivity through implementation of the Reservoir Area Management Plan (Condition 14). Connectivity assessment includes newly created stream channels that were previously inundated by Project reservoirs prior to drawdown.

a five-year flow event[29,30] unless it is unsafe for field crews, in which case monitoring shall be conducted as soon thereafter as safe conditions occur.

Reporting: The Licensee shall submit annual reports to the Deputy Director. Annual reports shall, at a minimum, include:

(1) A summary of monitoring results;
(2) An overall assessment of fish passage in the newly accessible Klamath River and tributaries; and
(3) A summary of tributary obstructions that limit fish passage and proposed remedial actions.

The Tributary-Mainstem Connectivity Plan, dated August 2022, as submitted by the KRRC for review and approval by the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this action and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Tributary-Mainstem Connectivity Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Tributary-Mainstem Connectivity Plan upon receipt of all required approvals.

Action 2: Spawning Habitat Evaluation. The Licensee shall implement spawning habitat. The Licensee shall develop a Spawning Habitat Availability Report and Plan (SHARP) that: (i) includes field surveys and remote sensing efforts to quantify available spawning habitat prior to and following drawdown in the Hydroelectric Reach and several tributaries[31]; (ii) summarizes the survey of newly-accessible anadromous fish spawning habitat; and (iii) includes potential actions that the Licensee may implement to augment spawning habitat in the mainstem Klamath River and its tributaries if needed. The SHARP shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, NMFS, USFWS, ODEQ, and Oregon Department of Fish and Wildlife. The SHARP shall be submitted to the Executive Director of the State Water Board or the Deputy Director for review and approval no later than December 31 of the year in which drawdown is completed.

[29] A 5-year flow event is 10,908 cfs as recorded at USGS gage no. 11516530 (below Iron Gate).
[30] A 5-year flow event may occur outside of the two years following completion of drawdown, in which case the monitoring described here would be required.
[31] Tributaries include Jenny Creek, Fall Creek, Shovel Creek, and Spencer Creek. If the spawning habitat tributary target of 4,700 square yards is achieved prior to surveying each tributary, tributary monitoring may be discontinued. If the spawning habitat tributary target is not met in the initial survey effort, additional tributaries that will be surveyed include Camp Creek, Scotch Creek, Dutch Creek, Deer Creek and/or Beaver Creek.

If it is necessary for the Licensee to take action to augment spawning habitat based on the results of the survey of spawning habitat (i.e., if the spawning habitat target metrics [i.e., tributary – 4,700 square yards, mainstem – 44,100 square yards] identified in Section 2 of the SHARP are not met), the Licensee shall update the SHARP to include the following elements for proposed actions to improve spawning habitat: 1) a detailed description of each proposed action; 2) locations of the proposed actions; 3) duration and timing (e.g., season) for implementation of the proposed actions; and 4) assessment of estimated spawning habitat benefits resulting from the proposed actions compared to the targets set forth in the SHARP. The Licensee shall evaluate a range of actions to meet the spawning targets identified in Section 2 of the SHARP. When spawning gravel augmentation is not appropriate[32], the Licensee shall evaluate and propose other actions to improve spawning and rearing habitat that meet the targets identified in Section 2 of the SHARP. Other actions may include: installation of large woody material, riparian planting for shade coverage, wetland construction or enhancement, and cattle exclusion fencing.

Reporting: The Licensee shall submit annual reports to the Deputy Director no later than April 1 of the following year for as long as the Licensee is conducting surveys or implementing spawning habitat improvement actions. Annual Reports shall, at a minimum, include:

(1) A summary of monitoring results; and
(2) A summary of the actions, if needed, implemented to improve spawning habitat.

The Spawning Habitat Availability Report and Plan, dated August 2022, as submitted for review and approval to the State Water Board on August 11, 2022, satisfies the requirements of this action and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the SHARP shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the SHARP upon receipt of all required approvals.

Juvenile Outmigration Aquatic Resource Measure

The Juvenile Outmigration AR Measure includes three actions: 1) Mainstem Salvage of Overwintering Juvenile Salmonids; 2) Tributary-Mainstem Connectivity Monitoring; and 3) Rescue and Relocation of Juvenile Salmonids from Tributary Confluence Areas.

Action 1: Mainstem Salvage of Overwintering Juvenile Salmonids. Except as modified by this condition, the Licensee shall implement the overwintering juvenile salmonid salvage and relocation efforts described in Action 1 of the Outmigrating Juveniles AR Measure in the Lower Klamath Project Biological Opinion. The Licensee shall evaluate sites in the Klamath River between Iron Gate Dam (RM 192.9) and the Trinity River (RM 43.4) prior to reservoir drawdown to identify salvage locations based on the

[32] Gravel augmentation shall only be performed in the mainstem Klamath River, unless the Deputy Director-approved SHARP allows otherwise.

presence and relative abundance of juvenile coho salmon and the suitability of such sites for salvage. Site selection and salvage methods shall be developed in consultation with staff from CDFW, NMFS, State Water Board, and North Coast Regional Board, and implemented as approved by the Deputy Director. Prior to drawdown, the Licensee shall relocate juvenile coho salmon to off-channel ponds. A technical memorandum identifying target capture locations and methods of salvage of overwintering juvenile coho salmon shall be submitted to NMFS, CDFW, and the State Water Board at least six months prior to salvage.

Action 2: Tributary-Mainstem Connectivity Monitoring. The Licensee shall implement the Tributary-Mainstem Connectivity Plan approved under the Mainstem Spawning AR Measure section of this condition above.

Action 3: Rescue and Relocation of Juvenile Salmonids from Tributary Confluence Areas. No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan (Juvenile Salmonid Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Juvenile Salmonid Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, NMFS, and CDFW.

At a minimum, the Juvenile Salmonid Plan shall include:

(1) Methods that will be used to find and relocate juvenile salmonids;
(2) Potential relocation areas and/or criteria that will be used to identify potential relocation areas;
(3) Detailed description of water quality monitoring to be performed at each confluence of the Klamath River and the 13 tributaries[33] listed in Action 3 of the Juvenile Outmigration AR Measure. In addition, the plan shall include water quality triggers for implementation of juvenile salmonid relocation efforts. The Licensee shall perform the water quality monitoring required here consistent with the sampling methods and quality control procedures identified in the Deputy-Director-approved WQMP and its QAPP (Condition 1). The Licensee shall provide the proposed frequency, duration, and location of water quality monitoring that will be conducted under Action 3 of the Juvenile Outmigration AR Measure. The Licensee may use water quality monitoring results from implementation of the WQMP (Condition 1), as applicable. The plan shall identify what monitoring results from Condition 1 may be used under this action;
(4) Detailed description of proposed rescue efforts that includes: duration, method of rescue, locations for capture and relocation; and
(5) Reporting to the Deputy Director on implementation of Action 3 of the Juvenile Outmigration AR Measure within six months following implementation of rescue and relocation efforts. At a minimum, reporting shall include: a summary of the water quality data collected; any actions taken by the Licensee to rescue and

[33] The 13 tributaries are: Bogus Creek, Dry Creek, Cottonwood Creek, Shasta River, Humbug Creek, Beaver Creek, Horse Creek, Scott River, Tom Martin Creek, O'Neil Creek, Walker Creek, Grider Creek, and Seiad Creek.

relocate juvenile salmonids, including number of juvenile salmonids rescued (including age class), release location, and the success of such efforts.

The Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, dated August 2022, as submitted for review and approval to the State Water Board on August 11, 2022, satisfies the requirements of this action and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Juvenile Salmonid Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Juvenile Salmonid Plan upon receipt of all required approvals.

Suckers Aquatic Resource Measure

The Licensee shall implement the California AR-6 Adaptive Management Plan – Suckers (California Suckers Plan), dated August 2022, as submitted to the State Water Board on August 11, 2022. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the California Suckers Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall implement any updates to the California Suckers Plan upon Deputy Director and any other required approvals.

CONDITION 7. REMAINING FACILITIES

No later than six months following issuance of the FERC license surrender order, and prior to Project implementation, the Licensee shall submit a Remaining Facilities Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval.

At a minimum, the Remaining Facilities Plan shall include:

(1) A list and description of all Project facilities and structures that will be retained during Project implementation[34], including but not limited to facilities buried in place;
(2) An analysis of potential water quality impacts associated with remaining facilities and operations, including hazardous materials or wastes present at the facilities and the potential for erosion or runoff to surface waters;
(3) Measures the Licensee will implement to ensure remaining facilities do not contribute to water quality impairments; and
(4) Provisions to ensure that any ongoing measures will be implemented when ownership of the facilities and/or responsibility for operations is transferred to another entity.

[34] While all remaining facilities shall be listed in the Remaining Facilities Plan, it is not necessary to include a description and other information for recreational facilities addressed under Recreation Facilities (Condition 19) and hatcheries addressed under Hatcheries (Condition 13).

The Remaining Facilities Plan, dated December 2021, submitted to FERC on December 14, 2021, and submitted to the State Water Board for review and approval July 7, 2022, satisfies the requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Remaining Facilities Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Remaining Facilities Plan upon receipt of all required approvals.

CONDITION 8. PUBLIC DRINKING WATER SUPPLIES

This condition outlines provisions to ensure protection of public drinking water supplies that may be impacted by Project implementation, including drinking water supplies sourced from the Klamath River and the City of Yreka's water supply. The provisions for each of these types of water supplies are provided below.

Drinking Water Supplies Sourced from the Klamath River. No later than three months following issuance of the FERC license surrender order, and prior to Project implementation, the Licensee shall consult with community water systems, transient non-community water systems, or other drinking water providers that use Klamath River surface water for drinking water to identify appropriate measures to reduce water supply impacts associated with Project implementation. The Licensee shall ensure that Project implementation does not result in service of water that fails to meet drinking water quality standards. Potential measures shall include, as appropriate: (1) providing an alternative potable water supply; (2) providing technical assistance to assess whether existing treatment is adequate to treat the potential increase in sediments and sediment-associated contaminants to meet drinking water standards; (3) providing water treatment assistance to adequately treat Klamath River water to minimize suspended sediments and associated constituents that may impact human health; (4) ensuring that transient, non-community supplies are temporarily shut off for drinking; and/or (5) ensuring that water not intended for drinking is clearly marked as non-potable.

At least six months prior to initiating drawdown, the Licensee shall submit the California Public Drinking Water Management Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval. The California Public Drinking Water Management Plan shall: (i) identify all drinking water supplies sourced from the Klamath River that may be impacted by the Project; and (ii) details measures the Licensee will implement to protect each potentially affected water supply and why such measures are sufficient to protect the drinking water supplies. The Licensee shall implement the measures sufficiently prior to, during, and following the reservoir sediment releases to ensure protection of water supplies. The Deputy Director may require modifications or additional measures. The Licensee shall provide the Deputy Director with a summary of its implementation of this provision within three months of concluding implementation of the measures.

City of Yreka's Water Supply. Prior to initiating drawdown of Project reservoirs, the Licensee shall either temporarily or permanently reroute the existing City of Yreka water supply pipeline across the Daggett Road Bridge. The Licensee shall coordinate with the City of Yreka to provide an uninterrupted water supply during replacement, and the estimated water delivery outage timeframe shall be agreed upon between the City of Yreka and Licensee prior to construction, consistent with the California Public Drinking Water Management Plan. The new replacement pipeline section shall be connected to the existing City of Yreka water supply pipeline and installed in a location that prevents Klamath River flows during and after drawdown from affecting the City of Yreka's water supply.

Any work the Licensee undertakes to ensure that the City of Yreka water supply intake structures comply with fish screen criteria shall be completed within the water delivery outage period specified in this condition. Installation of a fish barrier that does not impact the City of Yreka's water supply and associated intake structures may be performed at an alternate time outside of the water delivery outage period.

Except as provided in this condition, the Licensee shall ensure uninterrupted water supply during replacement of the water pipeline section, any required intake structure modifications, and throughout Project implementation. A short water delivery outage is necessary to make the final connections following construction of the new pipeline. The Licensee shall limit the water delivery outage to a maximum of 12 hours or another water delivery outage timeframe agreed upon between the City of Yreka and the Licensee. The Licensee shall coordinate the water delivery outage period with the City of Yreka to ensure the City of Yreka has an adequate supply of water stored to cover the maximum water delivery outage period.

Water pipeline and intake work shall not cause impacts to water quality that exceed North Coast Basin Plan standards. If the Licensee proposes any in-water work, the Licensee shall prepare a water quality monitoring and protection plan in compliance with Condition 10 of this certification for Deputy Director review and approval.

The California Public Drinking Water Management Plan submitted to FERC on December 14, 2021, and submitted to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the California Public Drinking Water Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the California Public Drinking Water Management Plan upon Deputy Director and any other required approvals.

CONDITION 9. AQUATIC VEGETATION MANAGEMENT

In the event chemical vegetation control is proposed to control algae or aquatic weeds, the Licensee shall consult with staff from the United States Army Corps of Engineers (USACE), CDFW, North Coast Regional Board, and State Water Board and submit a

proposal to the Deputy Director for review and approval. The proposal shall include: (1) the Licensee's plans to implement chemical vegetation management, including any public noticing or additional measures proposed beyond those required in this certification; (2) the timeline for the application of chemicals and any potential impacts to beneficial uses of water, including Native American culture uses; (3) comments and recommendations made in connection with the consultation and how they were incorporated into the proposal; and (4) a description of how the proposal incorporates or addresses use of glyphosate in an aquatic formulation, avoidance of glyphosate formulations containing the surfactants POEA or R-11, and prohibition of application if precipitation is predicted within 24 hours of intended use. If another herbicide is selected for use, it shall meet the characteristics of low soil mobility and low toxicity to fish and aquatic organisms and shall be applied using low use rates (i.e., spot treatments), avoidance of application in the rain, avoidance of treatments during periods when fish are in life stages most sensitive to the herbicide(s) used, and adherence to appropriate buffer zones around stream channels as specified in Bureau of Land Management 2010[35].

The Deputy Director may approve, deny, or require modifications of the proposal. The Licensee shall file any Deputy-Director-approved proposal, together with any required proposal modifications, with FERC. The Licensee shall implement the proposal upon Deputy Director and any other required approvals. Any changes to the proposal shall be approved by the Deputy Director prior to implementation.

At a minimum, the Licensee shall comply with the terms in State Water Board Order No. 2013-0002-DWQ (as amended by Orders 2014-0078-DWQ, 2015-0029-DWQ, 2016-073-EXEC, 2017-0015-EXEC, and 2020-0037-EXEC, and any amendments thereto), National Pollutant Discharge Elimination System (NPDES) No. CAG990005, *Statewide National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Water of the United States from Algae and Aquatic Weed Control Applications* and any amendments thereto.

CONDITION 10. CONSTRUCTION GENERAL PERMIT COMPLIANCE AND WATER QUALITY MONITORING AND PROTECTION PLANS

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, 2012-0006-DWQ, and 2022-0057-DWQ, as applicable), and ongoing amendments during the life of the Project.

For any ground-disturbing activities that could impact water quality (including beneficial uses) that are neither addressed by the Construction General Permit nor addressed in other conditions of this certification (e.g., Reservoir Drawdown [Condition 3], Hatcheries

[35] Bureau of Land Management (BLM). 2010. Final environmental impact statement. Vegetation treatments using herbicides on BLM lands in Oregon. Volume 2-Appendices. FES 10-23 BLM/OR/WA/AE-10/077+1792. Prepared by BLM, Pacific Northwest Region, Portland, Oregon.

[Condition 13], and Restoration [Condition 14]) site-specific water quality monitoring and protection plans shall be prepared and implemented following Deputy Director approval. Activities for which site-specific water quality monitoring and protection plans shall be prepared include, but are not limited to, Ward's Canyon-related work (Condition 19) and other pre-drawdown and drawdown construction-related work (Condition 3). Prior to construction or other activity that could impact water quality or beneficial uses, the Licensee shall submit the water quality monitoring and protection plan to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement site-specific water quality monitoring and protection plans upon receipt of Deputy Director and any other required approvals.

Any water quality monitoring and protection plans shall include measures to control erosion, stream sedimentation, dust, and soil mass movement. The plans shall be based on actual-site geologic, soil, and groundwater conditions and at a minimum include:

(1) Description of site conditions and the proposed activity;
(2) Detailed descriptions, design drawings, and specific topographic locations of all control measures in relation to the proposed activity, which may include:
    a. Measures to divert runoff away from disturbed land surfaces;
    b. Measures to collect and filter runoff from disturbed land surfaces, including sediment ponds at the sites; and
    c. Measures to dissipate energy and prevent erosion;
(3) Revegetation of disturbed areas using native plants and locally-sourced plants and seeds; and
(4) A monitoring, maintenance, and reporting schedule.

A minimum of three weeks prior to the start of ground-disturbing construction activities, unless an alternate timeframe is approved by the Deputy Director, the Licensee shall submit a California Erosion and Sediment Control Plan to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval. The California Erosion and Sediment Control Plan shall be developed in consultation with the State Water Board, North Coast Regional Board, and appropriate Tribes and identify any additional erosion and sediment control best management practices (BMPs) beyond those required by Condition 10 (e.g., Construction General Permit) that the Licensee will use to minimize pollution from sediment erosion caused from Project implementation. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the California Erosion and Sediment Control Plan upon receipt of Deputy Director and any other required approvals. Any changes to the California Erosion and Sediment Control Plan shall be approved by the Deputy Director prior to implementation. Potential ~~best management practices (~~BMPs~~)~~ include those identified in the Licensee's November 2020 Definite Decommissioning Plan, *Water Quality Management for Forest System Lands in California –Best Management Practices* (USFS 2012), California Department

of Transportation's May 2017 *Construction Site Best Management Practices (BMP) Manual* (Caltrans BMP Manual) (Caltrans 2017), or other appropriate documents.

CONDITION 11. WASTE DISPOSAL

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Waste Disposal Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Waste Disposal Plan shall describe how the Licensee will manage and dispose of all non-hazardous wastes[36] generated as part of the Project in a manner protective of water quality. The Waste Disposal Plan shall be developed in consultation with staff from the North Coast Regional Board and State Water Board.

At a minimum, the Waste Disposal Plan shall include:

(1) The elements of the waste disposal description presented in the November 2020 Definite Decommissioning Plan filed with FERC, that influence water quality, and as updated based on the requirements presented in this condition;
(2) An estimate of the quantity and nature of anticipated waste generated by dam removal and other Project decommissioning activities and a description of where all materials and debris will be disposed;
(3) A detailed description of on-site disposal, including the proposed locations and associated size of sites;
(4) Erosion control measures for on-site disposal activities; and
(5) A proposal to restore on-site disposal sites in accordance with the Construction General Permit and stormwater pollution and prevention plans (consistent with Condition 10 of this certification), including monitoring, reporting, and follow up actions (if needed) to ensure the long-term stability of the restored disposal site and protection of water quality.

On-site disposal of inert, non-hazardous debris resulting from dam removal and other Project decommissioning activities may be buried at disposal sites identified in the Waste Disposal Plan. With exception of the J.C. Boyle scour hole and powerhouse tailrace disposal sites identified in the November 2020 Definite Decommissioning Plan, the Licensee shall ensure that the disposal sites are above the ordinary high-water mark (OHWM) and in a location that does not drain directly to surface waters. The Licensee shall select disposal site locations where drainage patterns can be preserved. If a waste disposal site has the potential to drain into surface waters, catch basins shall be constructed whenever feasible[37] and other appropriate BMPs from the Caltrans BMP Manual shall be implemented, to intercept runoff before it reaches surface waters.

[36] Management of hazardous materials is covered in Hazardous Materials Management (Condition 12).

[37] The Licensee shall provide justification for any determination that a catch basin is infeasible at a disposal site with the potential to drain into surface water. Additionally, the Licensee shall provide support for why other appropriate BMPs from the Caltrans Manual are sufficient to protect water quality and beneficial uses.

On-site disposal areas that will remain uncovered through the rainy season (between October 16 and May 14) shall be protected with appropriate BMPs from the Caltrans BMP Manual to prevent erosion or as otherwise allowed under Condition 10 of this certification. Reinforced steel and other recyclable materials should be recycled, when feasible, at local recycling facilities. Excavated embankment material may be used as topsoil to cover on-site disposal areas prior to grading and being sloped for drainage. Concrete rubble resulting from demolition of the powerhouses may be buried in the existing tailrace channel. All mechanical and electrical equipment shall be hauled to a suitable commercial landfill or salvage collection point. Prior to Project completion, all on-site disposal locations shall be graded and stabilized to reduce the potential for erosion.

The California Waste Disposal Plan, dated December 2021, submitted by the KRRC to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfies the plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Waste Disposal Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Waste Disposal Plan upon receiving all required approvals.

CONDITION 12. HAZARDOUS MATERIALS MANAGEMENT

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Hazardous Materials Management Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Hazardous Materials Management Plan shall be developed in coordination with State Water Board staff. The Hazardous Materials Management Plan shall include the following: (a) proper disposal or abatement of hazardous materials and wastes that are encountered as part of decommissioning activities (e.g., asbestos tiles or building materials, batteries, etc.); (b) proper storage, containment, and response to spills of hazardous materials and wastes that are part of Project implementation (e.g., gasoline and diesel for vehicles, oil and other fluids for construction equipment, etc.); and (c) proper removal and disposal of septic tanks. At a minimum, the Hazardous Materials Management Plan shall include the requirements presented in this condition and:

(1) The elements of the hazardous materials management description presented in the November 2020 Definite Decommissioning Plan;
(2) A list with contact information of federal, state, and local officials the Licensee will contact to respond in the event of a hazardous materials spill. The list and contact information shall be maintained and updated by the Licensee. In the event of a hazardous materials spill, at a minimum, the Licensee shall immediately inform the California Emergency Management Agency, CDFW, North Coast Regional Board, and the State Water Board staff of the magnitude, nature, time, date, location, and action taken for the spill;

(3) An inventory of hazardous materials and wastes at each facility and the plan for final disposition of the hazardous materials and wastes;
(4) Description of hazardous materials storage, spill prevention, and cleanup measures, including the deployment and maintenance of spill cleanup materials and equipment at each facility/site to contain any spill from Project activities. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment; and
(5) Testing, monitoring, and reporting that will be implemented if a spill occurs to ensure water quality is not affected.

For structures being removed, the Licensee shall inspect each structure prior to removal for hazardous materials (e.g. asbestos-containing material, lead-based paint, and polychlorinated biphenyls [PCBs]) and perform any necessary sampling or testing when inspection alone does not provide sufficient information to determine whether the material is hazardous. Any material with asbestos, lead, PCBs, or other hazardous waste shall be handled and disposed of as hazardous waste at approved hazardous waste facilities in accordance with applicable waste management regulations. Other deconstruction materials shall be disposed of as non-hazardous waste in accordance with Waste Disposal (Condition 11) provisions of this certification.

All hazardous materials removed from inside existing structures during Project implementation (e.g., paints, oils, and welding gases) shall be either returned to the vendor, recycled, or managed and disposed of as hazardous waste at an approved hazardous waste facility in accordance with applicable federal and state regulations. Transformer oils shall be tested for PCBs if no data exist. Any tanks that contained hazardous materials shall be decontaminated prior to disposal. Universal hazardous waste (e.g., lighting ballasts, mercury switches, and batteries) shall be handled in accordance with applicable federal and state universal waste regulations.

Existing septic tanks associated with Project facilities shall be decommissioned in place or removed and disposed of in accordance with the corrective action requirements specified in the State Water Board's *Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy)[38~~35~~] (State Water Board 2012).

The California Hazardous Materials Management Plan, dated December 2021, submitted by the KRRC to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfies the plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Hazardous Materials Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such

[38~~35~~] The OWTS Policy was adopted by the State Water Board on June 19, 2012 per Resolution No. 2012-0032; it was approved by the Office of Administrative Law on November 13, 2012; and consistent with OWTS Policy section 13.0, became effective on May 13, 2013. On April 17, 2018, per Resolution No. 2018-0019, the State Water Board amended the OWTS Policy renewed its conditional waiver.

approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Hazardous Materials Management Plan upon receiving all required approvals.

CONDITION 13. HATCHERIES

No later than six months following issuance of a FERC license surrender order, the Licensee shall submit a Hatcheries Management and Operations Plan (Hatcheries Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Hatcheries Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, and NMFS. At a minimum, the Hatcheries Plan shall include:

(1) Annual fish production goals that include the target production numbers by species and life stage;
(2) Identification of water supplies that will be used to operate ~~the Iron Gate and~~ Fall Creek Hatchery including: location; anticipated diversion rates (cfs) and total diversion amounts (annual and monthly); minimum amount of flow that will be bypassed below the diversions to provide volitional fish passage; and summaries of and compliance with any water right requirements associated with water diversions;
(3) Implementation actions for protection of hatchery and natural fish populations (as impacted by hatchery operations) in the event water supply to Fall Creek Hatchery is unavailable due to drought or other limitations;
(4) The proposed construction BMPs for ground-disturbing activities associated with construction of the hatchery, including establishment of a 20-foot buffer around delineated wetlands, unless site-specific conditions require adjustment of the buffer in a manner that remains protective of delineated wetlands and is acceptable to a qualified and approved biologist. Construction associated with these activities shall be subject to the BMPs required under the Construction General Permit;
(5) Expected duration of the hatchery's operation~~s~~; and
(6) Reporting details, such as the amount of water diverted ~~at each hatchery~~, bypass flows, and reporting requirements under the NPDES permit.

Prior to operation of the Fall Creek Hatchery, the Licensee shall ensure that it has obtained coverage under and complies with a NPDES permit issued by the North Coast Regional Board. If the closure of Fall Creek Hatchery is anticipated while the license surrender order is still in effect, the Hatchery Plan shall be updated to include the proposal for decommissioning of the facilities.

The Hatcheries Management and Operations Plan dated July 2020 and submitted by the KRRC to the State Water Board on July 14, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the plan requirements of this condition with the modification outlined below. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment.

- The Licensee shall ensure that the appropriate water right reports under California Code of Regulation, title 23, section 929, or the appropriate statements of diversion and use for diversion under riparian or pre-1914 water rights under

Water Code section 5101 are filed with the State Water Board for water diversions used for hatchery operations.

Any changes to the Hatcheries Plan with the potential to increase impacts to water quality shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Hatcheries Plan upon receipt of all required approvals.

CONDITION 14. RESTORATION

No later than six months following issuance of the FERC license surrender order, and prior to initiation of drawdown activities, the Licensee shall submit a Reservoir Area Management Plan (Restoration Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Restoration Plan shall be developed in consultation with staff from the North Coast Regional Board, State Water Board, and CDFW. At a minimum, the Restoration Plan shall include:

(1) Detailed description of proposed restoration activities (e.g., grading, planting, swales, wetland construction, etc.). The description of proposed restoration activities shall include associated water quality protection measures the Licensee will implement as part of restoration;
(2) Preliminary maps of proposed restoration activities that identify~~ing~~ proposed locations for restoration activities. The preliminary map shall be updated within six months following drawdown, as necessary. The preliminary maps shall: identify areas of grading, water runoff control measures, planting, seeding, mulching, and irrigation areas. Preliminary maps should include final limits of work zones, delineated wetlands within areas of proposed disturbance, the reservoir footprints, the J.C. Boyle Power Canal and scour hole, and all areas of temporary disturbance where revegetation activities would occur;
(3) Exclusive use of native plants, with preference for plants that promote soil stabilization;
(4) Description and results of the Licensee's evaluation of the presence of wetlands that could be affected by the Project, including wetlands in the potential disposal areas;
(5) Description of measures the Licensee will implement to ensure no net loss of wetland and riparian habitat. Measures shall include establishment of a minimum 20-foot buffer around all non-reservoir dependent, delineated wetlands potentially affected by construction impacts (unless site-specific conditions require adjustment of the buffer in a manner that remains protective of non-reservoir dependent, delineated wetlands and is acceptable to a qualified and approved biologist) to deter heavy machinery from traversing the wetland and prevent runoff pollution associated with Project activities from directly entering the non-reservoir dependent wetlands. (For reference, non-reservoir dependent wetlands refers to wetlands that are not anticipated to be impacted by drawdown and their primary hydrological sources are the Klamath River, a stream or seep, and/or precipitation.);

(6) Description of how the Licensee will ensure floodplain connectively within the reservoir footprint;
(7) Description of how the Licensee will monitor for and address any invasive weeds in the restored area;
(8) Plan for installation of large woody material in the Hydroelectric Reach in California that includes:
    a. Number or volume of large woody material to be installed;
    b. Consistency with practices in *California Salmonid Stream Habitat Restoration Manual* (CDFG 2010) or guidance provided through consultation with staff from CDFW, NMFS, North Coast Regional Board, and State Water Board; and
    c. Timeline for placement of large woody material;
(9) Monitoring and reporting on the implementation of the Restoration Plan, including adaptive management measures that will be implemented over time to ensure successful restoration (e.g., measures to address the loss of newly planted vegetation, soil instability[39], etc.). Monitoring shall occur frequently enough to determine whether plantings are successful and to facilitate implementation of adaptive measures (e.g., supplemental irrigation, re-seeding, changes in plant types) to ensure rapid establishment of vegetation; and
(10) Confirmation that water pumps used for irrigation are screened to prevent fish injury or entrainment.

Within six months of concluding drawdown activities, and annually thereafter until otherwise directed by the Deputy Director, the Licensee shall provide a report to the Deputy Director documenting implementation of the Restoration Plan, including highlights of any problems encountered and adaptive management measures deployed or proposed to address the problems. The Licensee shall provide additional reports or information related to implementation of the Restoration Plan if requested by the Deputy Director.

The Reservoir Area Management Plan, dated August 2022, as submitted by the KRRC to the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfy the plan requirements of this condition and are hereby approved with the modification noted below. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment.

- A minimum of six months prior to reservoir drawdown, the Licensee shall submit a Cold-Water Report to the Deputy Director for review and approval that includes: (1) identification of potential cool-water areas in the Klamath River from the upper end of J.C. Boyle Reservoir to Cottonwood Creek; and (2) methods for monitoring and analysis of the cold-water area, triggers that would guide implementation of adaptive management measures if necessary, and a schedule for monitoring, analysis, and reporting of cold-water areas. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Cold-Water Report, together with any required

[39] Adaptive management measures for soil stabilization may refer to the Slope Stability Monitoring Plan required in Slope Stability (Condition 18).

modifications, with FERC. Any changes to Cold-Water Report shall be approved by the Deputy Director prior to implementation. Upon receiving all necessary approvals, the Licensee shall implement the Cold-Water Report for the duration of the license surrender order or until otherwise approved by the Deputy Director.

Any changes to the Restoration Plan, including changes to the final reservoir restoration designs, shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Restoration Plan upon receipt of all required approvals.

CONDITION 15. WATER SUPPLY MONITORING AND MANAGEMENT

The Licensee shall implement the following measures to protect water supply and beneficial uses. The Licensee shall annually prepare, and submit to the Deputy Director, a Water Supply Management Report that includes the elements described below. The Deputy Director may require implementation of additional adaptive management measures informed by the report and associated monitoring results.

Surface Water Diversions: The Licensee shall identify all points of diversion on the Klamath River listed in the Electronic Water Rights Information Management System (eWRIMS). The Licensee shall contact all California water rights holders with points of diversion on the Klamath River to determine whether the water right holder is interested in working with the Licensee to evaluate potential Project impacts to the water right holder. If potential impacts are identified and if the water right holder is interested in working with the Licensee, the Licensee shall provide temporary accommodations (e.g., replacement water, settling basins, etc.) to address potential impacts. Following dam removal, the Licensee shall investigate any impacts reported by a diverter. If the investigation confirms an adverse impact has occurred as a result of dam removal, the Licensee shall implement measures to reduce impacts and allow the water right holder to divert water in the same manner (e.g., amounts, suitable quality, and timing) as before dam removal.

The year prior to and annually for the first two years following drawdown, the Licensee shall submit a Water Supply Management Report to the Deputy Director on implementation of the surface water supply activities described above. At a minimum, the report shall include: a map showing the location of potentially affected points of diversion; a description of the potential adverse effects; a description of proposed/implemented mitigation measures; and the number of water right holders who agreed to work with the Licensee to address potential water supply issues.

Groundwater: To determine Project effects on surrounding groundwater wells, the Licensee shall, within a 1,000-foot range of the reservoirs' OHWM, monitor groundwater levels before, during, and after drawing down the reservoirs. To identify groundwater wells, the Licensee shall outreach to all residents and landowners within 1,000 feet of the California Project reservoirs to inquire about their groundwater wells. The outreach effort shall include information regarding the Local Impact Mitigation Fund, including information on any prerequisites to access the fund (e.g., if funding is dependent on

participation in the groundwater monitoring effort). At least two months prior to commencing drawdown activities, the Licensee shall monitor groundwater levels at all available locations or up to 10 locations, whichever is less, within 1,000 feet of the California reservoirs dispersed throughout the Hydroelectric Reach in California. The Licensee may begin groundwater elevation monitoring earlier, in order to integrate observations of natural seasonal fluctuations in groundwater elevation into the impact analysis.

The Licensee shall continue to monitor groundwater levels, at least monthly, until otherwise approved by the Deputy Director and for a term of at least two years following completion of drawdown of Copco No. 1 and Iron Gate Reservoirs. Monitoring may occur at groundwater wells of landowners or residents with wells located within 1,000 feet of the California Project reservoirs who volunteer to allow testing or at other groundwater monitoring wells around the California Project reservoirs. Potential groundwater monitoring locations and measures to address potential water supply impacts are identified in the California Water Supply Management Plan, dated July 2022. The Licensee shall provide the Deputy Director with the locations of groundwater wells that will be monitored per this condition, and the Deputy Director may require additional monitoring on lands under the control of the Licensee if the locations chosen do not provide sufficient information on potential impacts to groundwater levels. The Licensee shall submit an annual Groundwater Report to the Deputy Director, for a minimum of two years directly following completion of drawdown. Monitoring duration may be adjusted based on groundwater levels reported in the annual Groundwater Report, and as approved by the Deputy Director. At a minimum, the annual Water Supply Management Report shall include a section on groundwater that:

- Documents groundwater level monitoring results;
- Highlights any trends or significant changes in groundwater levels; and
- Summarizes actions the Licensee has or will implement to address any impacts to groundwater supply associated with Project implementation. Actions implemented by the Licensee shall ensure disruptions in groundwater supply determined to be a result of the Project are limited. Actions shall include, but are not limited to, providing temporary water until Project impacts are adequately addressed.

The California Water Supply Management Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfy the requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the California Water Supply Management Plan upon receipt of all required approvals. Any changes to the California Water Supply Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the California Water Supply Management Plan upon receipt of all required approvals.

Fire Protection: The Licensee shall submit a Fire Management Plan to the Executive Director of the State Water Board or Deputy Director for review and approval prior to its implementation. The Fire Management Plan shall include a list and map of locations where fire trucks and/or helicopters may access the Klamath River and its tributaries for residential fire protection efforts in the Hydroelectric Reach.

The Fire Management Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the Fire Management Plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Fire Management Plan upon receipt of all required approvals. Any changes to the Fire Management Plan related to water supply access or that have the potential to affect water quality, including beneficial uses shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Fire Management Plan upon receipt of all required approvals.

If the Deputy Director finds that the measures undertaken to address water supply impacts are insufficient or additional reporting is needed, the Deputy Director may require the Licensee to implement additional measures or continue reporting on implementation of this condition.

CONDITION 16. AMPHIBIAN AND REPTILE MANAGEMENT

No later than three months following issuance of a FERC license surrender order, the Licensee shall submit an Amphibian and Reptile Rescue and Relocation Plan (Amphibian and Reptile Plan) to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Amphibian and Reptile Plan shall be developed in consultation with staff from CDFW, USFWS, and State Water Board.

The Amphibian and Reptile Plan shall address protection of amphibians and reptiles previously found in the areas of the Project affected by drawdown and land-disturbing activities that are listed under the Federal Endangered Species Act (ESA) or the California ESA, or are designated as Species of Special Concern by CDFW. These species may include, but are not limited to foothill yellow-legged frog, and western pond turtle. At a minimum the Amphibian and Reptile Plan shall include:

(1) The amphibians and reptiles covered by the plan;
(2) Surveys and protocols that will be implemented to identify and relocate amphibians and reptiles identified in the plan;
(3) Protocols for relocation that will be implemented upon the incidental discovery of a listed species during surveys;
(4) Identification of the minimum qualifications for the individual(s) that will conduct the surveys and relocations, if necessary;

(5) Timing and locations where surveys will be conducted, including all areas of the Project affected by drawdown and land-disturbing activities in California with known amphibian or reptile habitat or presence;
(6) Identification of potential relocation areas, which may include lower reaches of Klamath River tributaries with suitable habitat approved by USFWS and CDFW;
(7) Pre-construction surveys and associated reporting for western pond turtles conducted by an on-site biologist approved by applicable agencies and familiar with western pond turtle ecology;
(8) Provisions for rescue and relocation of western pond turtles after reservoir drawdown that includes survey timing to cover multiple life stages, survey frequency, survey locations, relocation areas with suitable habitat, survey methodology, and reporting of survey results within 60 days of the completion of surveys to applicable agencies and the State Water Board; and
(9) Monitoring and reporting that will be implemented to document compliance with this condition, including notification and reporting identified by USFWS and CDFW through consultation to develop the plan. Reporting shall include a report submitted to applicable agencies within 30 days of completing the Project, regarding all species handled and relocated; location, date, time and duration of the handling; enumeration and identification of species handled; identification of species life stage; identification of capture personnel; the release location and time; stream, transport, and receiving water temperatures; and location, date, and time of release.

The Amphibian and Reptile Plan must be approved by the Deputy Director prior to drawdown, in-water work, and work in riparian areas. Prior to approval of the Amphibian and Reptile Plan, the Licensee may implement ground-disturbing activities occurring entirely above the OHWM, so long as a USFWS- and CDFW-approved biological monitor surveys the area, monitors construction, and takes appropriate actions to protect amphibians and reptiles.

The California Terrestrial and Wildlife Management Plan, dated August 2022, as submitted by the KRRC to the State Water Board on July 28, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the California Terrestrial and Wildlife Management Plan upon receipt of all required approvals. Any changes to the California Terrestrial and Wildlife Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the California Terrestrial and Wildlife Management Plan upon receipt of all required approvals.

CONDITION 17. BALD AND GOLDEN EAGLE MANAGEMENT

The Bald and Golden Eagle Conservation Plan developed in consultation with USFWS staff that is dated January 2022, and submitted by the KRRC to the State Water Board on July 7, 2022, demonstrates that the potential effects to bald and golden eagles from Project implementation have been considered and addressed by the Licensee through

avoidance, minimization, and mitigation measures. The Bald and Golden Eagle Conservation Plan supports the KRRC's request for an incidental take permit for bald and golden eagles.

The Licensee shall comply with the USFWS' incidental take permit, dated October 14, and effective October 17, 2022, issued under the Bald and Golden Eagle Protection Act, for any incidental take of bald eagles or golden eagles, and any amendments thereto. Any updates to the incidental take permit shall be approved by USFWS and submitted to the Deputy Director prior to implementation.

CONDITION 18. SLOPE STABILITY

The Licensee shall identify reservoir slopes and other Project areas prone to instability and implement site-specific measures to avoid potential slope erosion and associated increases in sedimentation to surface waters throughout Project implementation. Additionally, the Licensee shall monitor for and address slope instability throughout the term of the Project, including restoration activities. No later than three months following issuance of the FERC license surrender order and prior to starting drawdown, the Licensee shall submit a Slope Stability Monitoring Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Slope Stability Monitoring Plan shall be developed in consultation with State Water Board staff. At a minimum, the Slope Stability Monitoring Plan shall include:

(1) The material elements of the Licensee's proposal related to stability of embankments and reservoir rims, as presented in the November 2020 Definite Decommissioning Plan and the Licensee's commitment to implement final EIR Mitigation Measure GEO-1 (Slope Stabilization), and as updated based on the requirements presented in this condition;
(2) A list of slopes and Project areas prone to instability;
(3) Number and location of piezometer wells the Licensee will use to monitor water levels and pore pressure and/or alternative methods to monitor for slope stability;
(4) Number and location of inclinometer installations and/or alternative methods to monitor and determine slope stability;
(5) A list of measures the Licensee will implement to prevent erosion and maintain soil stability;
(6) A description of soil stability monitoring, including locations and schedule;
(7) Visual monitoring for potential slumping, cracking, and other signs of slope instability throughout the Project area;
(8) Potential measures the Licensee will implement to address soil instability;
(9) Coordination with Reservoir Drawdown (Condition 3) to address the potential modification of drawdown rates to control slope instability if necessary to protect infrastructure, property, or resources;
(10) Slope inspections during drawdown of the reservoirs and after storm events, and implementation of any necessary repairs, replacements, and/or additional measures to minimize potential slope instability effects on water quality based on inspection information; and
(11) Submittal of the following reports to the Deputy Director until the Licensee requests and the Deputy Director approves discontinuance of reporting:

a. An annual report that summarizes: slope stability monitoring and inspection information; any repairs, replacements, or additional stabilization measures implemented; and any proposed changes to the Slope Stability Monitoring Plan; and
b. Monthly reports during the rainy season (October 16 – May 14) that identify any areas that have experienced slope instability, any actions taken to control and improve slope stability, and an assessment of the success of initial and any ongoing slope stability actions implemented.

Upon request, the Licensee shall provide additional information regarding slope stability measures undertaken to address identified slope instability. If monitoring and inspection indicate that the measures identified in the Slope Stability Monitoring Plan are insufficient to protect water quality, the Deputy Director may establish a timeframe and require the Licensee to re-consult on the Slope Stability Monitoring Plan, make changes, and resubmit the Slope Stability Monitoring Plan for Deputy Director approval.

The California Slope Stability Monitoring Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the October 10, 2022 supplemental filing, satisfies the plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Slope Stability Monitoring Plan upon receipt of all required approvals. Any changes to the Slope Stability Monitoring Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Slope Stability Monitoring Plan upon receipt of all required approvals.

CONDITION 19. RECREATION FACILITIES

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Recreation Facilities Plan to the Executive Director of the State Water Board or the Deputy Director for review and approval. The Recreation Facilities Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, and CDFW. At a minimum, the Recreation Facilities Plan shall include:

(1) The material elements of the Licensee's recreation proposal for the Project, as presented in the 2020 Definite Decommissioning Plan, and as updated based on the requirements presented in this condition;
(2) A list of recreation facilities associated with the Project;
(3) Identification of recreation facilities that will be removed and a schedule for removal;
(4) Identification of any recreation sites to be added, modified, or maintained following dam removal, including location, the types of facilities to be added, modified, or maintained, and the proposed schedule for completion of new facilities or modifications to existing facilities;
(5) The Licensee's plans to facilitate transfer of ownership and/or operation of Project recreation facilities;

(6) Proposed measures to protect water quality and beneficial uses during any construction, removal, maintenance, or other activities associated with the Project recreation facilities;
(7) Water quality monitoring of Project recreation areas in compliance with this condition;
(8) Public education signage regarding aquatic invasive species and proper boat cleaning at established public boat access locations or visitor information kiosks in the vicinity;
(9) Installation, if necessary, and maintenance of boat cleaning stations at Project boat ramps for the removal of aquatic invasive species;
(10) Signage posted at operational Project recreation facilities for water quality impairments (e.g., *E. coli* or fecal coliform and microcystin toxin) discovered through sampling under this condition or other efforts. If water quality monitoring indicates the impairments are an ongoing problem, the Licensee shall propose implementation of appropriate measures as part of the annual reporting requirement outlined in this condition;
(11) Annual reporting to the Deputy Director on implementation of the Recreation Facilities Plan that includes: the status of any proposed construction, removal, or modifications to Project recreation facilities; water quality monitoring results required per this condition; and any proposed modifications to the Recreation Facilities Plan requested by the Licensee; and
(12) Consultation with American Whitewater and Upper Klamath Outfitters Association to schedule construction activities and access restrictions during construction to minimize adverse effects on whitewater boaters.

Recreation Areas Water Quality Monitoring: The Licensee shall collect and analyze grab water samples as outlined below for protection of the recreational water contact (REC-1) beneficial use as defined in the North Coast Basin Plan. The Licensee may use the water quality results collected under the WQMP (Condition 1) and other water quality monitoring efforts[40] in the Klamath River watershed that comply with Water Quality Monitoring and Adaptive Management (Condition 1) and the provisions of the Deputy Director approved WQMP, as appropriate.

For fecal coliform and *E.coli:*

Timing: Prior to drawdown, samples shall be collected during the 30-day period that spans the Independence Day holiday (June-July) and the Labor Day holiday (August-September). Following completion of drawdown, sampling shall be performed as necessary to monitor for water quality and beneficial use protection, as approved by the Deputy Director in the Recreation Facilities Plan.

[40] Other water quality efforts may include Interim Measure 15 as described in Appendix D of the Klamath Hydroelectric Settlement Agreement, as amended November 30, 2016.

Frequency: Project facilities shall be monitored twice every year until each recreation facility is transferred to a new owner or as otherwise approved by the Deputy Director in the Recreation Facilities Plan.

Location: Samples shall be collected at all Project recreation facilities that provide for recreational water contact unless otherwise approved by the Deputy Director in the Recreation Facilities Plan. Samples shall be collected at locations near restrooms, recreation facilities, and other high use areas.

Method: The Licensee shall use the five samples in 30-day methodology or other future protocol identified in the North Coast Basin Plan.

For microcystin toxin:

Prior to drawdown, the Licensee shall annually monitor for microcystin toxin at all Project recreation sites that provide for recreational water contact unless otherwise approved by the Deputy Director in the Recreation Facilities Plan. At a minimum, monitoring shall continue monthly (May through October) for two years following the completion of drawdown unless the recreation site is removed. For newly constructed or modified-existing recreation sites, the Licensee shall monitor microcystin toxins for a minimum of two year beginning with completion of construction or modifications, unless otherwise approved by the Deputy Director in the Recreation Facilities Plan.

The Licensee shall report monitoring results annually. Reporting shall: summarize monitoring results; highlight any exceedances of fecal coliform, *E. coli*, or microcystin toxin and propose adaptive management measures to address exceedances. Based on monitoring results, the Deputy Director may require the Licensee to modify monitoring frequency, methods, duration, or to implement additional adaptive management measures. The Licensee shall implement changes upon receipt of Deputy Director direction and any other required approvals.

The Recreation Facilities Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 28, 2022 for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the plan requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Recreation Facilities Plan upon receipt of all required approvals. Any changes to the Recreation Facilities Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Recreation Facilities Plan upon receipt of all required approvals.

Note that for any construction-related activities associated with tree removal in the Ward's Canyon Run, the Licensee shall develop and implement a water quality monitoring and protection plan that meets the requirements outlined in Condition 10.

CONDITION 20. LIMITATIONS ON HYDROPOWER OPERATIONS

This water quality certification is for the proposed removal of Project facilities as described in the Licensee's application and shall not be construed as approval of more than incidental, short-term interim operation of the Project hydroelectric facilities until such removal can be implemented.

Not later than 24 months following issuance of the FERC license surrender order, if drawdown and dam removal are not initiated, the Licensee shall submit an Interim Hydropower Operations Plan (Operations Plan) to the Deputy Director for review and approval. The Operations Plan shall describe additional measures the Licensee will implement to protect water quality and fisheries in advance of drawdown and dam removal activities. The Operations Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, NMFS, and USFWS. The Licensee shall solicit comments from the agencies listed above, and the Operations Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Operations Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Operations Plan upon receipt of Deputy Director and any other required approvals.

Dam removal must be initiated no later than five years following issuance of the FERC license surrender order unless the Licensee can demonstrate to the satisfaction of the Executive Director of the State Water Board that the delay is due to factors outside of the Licensee's control.

CONDITION 21. WATER RIGHTS MODIFICATION

The Licensee shall provide the State Water Board with a description of the Licensee's proposal for the post-dam removal disposition of all water rights associated with Project facilities. Prior to changing any water diversion for implementation of the Project, the Licensee shall consult with State Water Board staff regarding potential modifications to or transfer of state-issued water right permits and licenses that may be required by the Project. The Licensee shall follow the procedures for any such modification, as described in the California Water Code and in California Code of Regulations, title 23. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 or riparian claims. The State Water Board has separate authority under the California Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversion of water.

CONDITION 22. TRIBAL WATER QUALITY STANDARDS

Project implementation and compliance with the conditions in this certification are anticipated to result in improved compliance with downstream water quality standards for the Hoopa Valley Tribe, adopted in the *Water Quality Control Plan, Hoopa Valley*

Indian Reservation (Hoopa Valley Tribe 2008)[41]. The Karuk Tribe and Resighini Rancheria have received treatment-in-the-same-manner-as-a-state status, but do not yet have USEPA-approved Clean Water Act standards. The Yurok Tribe ~~and Karuk Tribe have~~ has applied to the USEPA for treatment-in-the-same-manner-as-a-state status under the Clean Water Act, and it is possible that other tribes may similarly apply for and receive such status.

To ensure that the requirements of this certification ultimately meet tribal Clean Water Act standards, the 32-month report on anticipated compliance under the Compliance Schedule (Condition 2), as well as monthly water quality reports described under Condition 1, shall be submitted to the Hoopa Valley Tribe, Resighini Rancheria, Karuk Tribe, and any other Native American tribes that have obtained treatment-in-the-same-manner-as-a-state status. Any comments from such tribes received by the Deputy Director on the report shall be a factor in the Deputy Director's consideration of whether to require implementation of additional management measures.

Additionally, the Licensee shall submit to the Hoopa Valley Tribe, Resighini Rancheria, Karuk Tribe, and any other tribe that has subsequently obtained treatment-in-the-same-manner-as-a-state status, any request to end or modify monitoring under Water Quality Monitoring and Adaptive Management (Condition 1) at the location(s) closest to or within that tribe's reservation, along with a summary of that location's monitoring results and associated data, to date. Any comments from such tribes received by the Deputy Director on the report will be a factor in the Deputy Director's consideration of whether to approve the cessation or modification of monitoring at that location(s).

CONDITION 23. CONSULTATION REQUIREMENTS

For any condition that requires consultation with specific agencies, the Licensee may consult with additional parties (including, through "good neighbor" agreements or through consultation commitments under the Klamath Hydroelectric Settlement Agreement). The Licensee is particularly encouraged to consult with local agencies with expertise in siting issues and local conditions, and with tribes that have resources that may be affected by various plans or adaptive management measures. Such consultation is likely to result in plans that are better conceived and more likely to receive approval without the need for additional modification.

ADDITIONAL CONDITIONS (CONDITIONS 24-41)

CONDITION 24. The State Water Board's approval authority includes the authority to withhold approval or to require modification of a proposal or plan prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required plan in a timely manner. If a time extension is needed to submit a report or plan 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 any Deputy-Director-approved time extensions

[41] See also a February 1, 2017, letter from Robert Franklin, Division Lead, Hoopa Tribal Fisheries – Water Division to Parker Thaler, State Water Board, Division of Water Rights.

with FERC. Under existing law, all delegations for approval by the Deputy Director are permissive, and do not divest the Executive Director or State Water Board of approval authority.

CONDITION 25. The State Water Board reserves the authority to reopen this certification based on evidence that the Project may be contributing to fish passage impediment in the Hydroelectric Reach upstream of the California/Oregon Stateline.

CONDITION 26. The State Water Board reserves the authority to add to or modify the conditions of this certification to incorporate changes in technology, sampling, or methodologies.

CONDITION 27. 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 28. 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 Klamath River watershed.

CONDITION 29. 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 30. This certification does not authorize any act which results in the unauthorized 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 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 applicable 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 applicable requirements of the cited laws for the Project authorized under this certification.

CONDITION 31. The Licensee shall submit any change to the Project, including Project operation, implementation, 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 Deputy Director for prior review and written approval. The Deputy Director shall determine significance and may require consultation with state and/or federal agencies. If the Deputy Director 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 Deputy Director.

CONDITION 32. 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.

CONDITION 33. In response to a suspected violation of any condition of this certification, the State Water Board or North Coast Regional 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 (California Water Code sections 1051, 13165,13267 and 13383).

CONDITION 34. 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 35. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local Project 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 36. 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 37. The Deputy Director and the Executive Officer shall be notified one week prior to the commencement of ground disturbing activities that may adversely affect water quality. Upon request, a construction schedule, and updates thereto, shall be provided to the State Water Board and North Coast Regional Board staff. The Licensee shall provide State Water Board and North Coast Regional Board staffs access to Project sites to document compliance with this certification.

CONDITION 38. 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 39. This certification is conditioned upon total payment of any fee required in California Code of Regulations, title 23, article 4.

CONDITION 40. This certification is subject to modification or revocation upon administrative or judicial review, including 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 41. 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.

Attachment 1B: Lower Klamath Project License Surrender
Water Quality Certification Amendment,
Federal Energy Regulatory Commission Project No. 14803
(Underline/Strikeout Version)

The State Water Resources Control Board hereby amends the water quality certification for the Klamath River Renewal Corporation's (KRRC) Lower Klamath Project License Surrender (Project) to modify Conditions 1 – 19, 22, and 24. Deletions are shown in ~~strikeout~~. Additions are shown in **bold underlined** text.

CONDITION 1. WATER QUALITY MONITORING AND ADAPTIVE MANAGEMENT

The ~~Klamath River Renewal Corporation (~~Licensee~~)~~ shall submit the **California** Water Quality Monitoring Plan (WQMP) for review and approval by the **Executive Director of the State Water Resources Control Board (State Water Board) or the** Deputy Director for the Division of Water Rights (Deputy Director) no later than six months following issuance of a Federal Energy Regulatory Commission (FERC) license surrender order and prior to Lower Klamath Project License Surrender (Project) implementation.[19] The WQMP shall be developed in consultation with staff from the ~~State Water Resources Control Board (~~State Water Board~~)~~, North Coast Regional Water Quality Control Board (North Coast Regional Board), Oregon Department of Environmental Quality (ODEQ), and California Department of Fish and Wildlife (CDFW). ~~The WQMP shall include comments received during the consultation process and identify how the Licensee addressed the comments.~~ The Deputy Director may require modifications as part of any approval. The Licensee shall file **any** ~~the~~ Deputy Director-approved **revisions to the** WQMP, together with any required plan modifications **not incorporated into a water quality certification amendment**, with FERC. Any changes to WQMP shall be approved by the Deputy Director prior to implementation. Upon receiving all necessary approvals, the Licensee shall implement the WQMP for the duration of the license surrender order or until otherwise approved by the Deputy Director in writing. The Deputy Director may require modifications to the WQMP, including implementation of additional adaptive management measures informed by monitoring results, as part of review and approval of reports as specified below.

At a minimum, the WQMP shall include: (1) a monitoring program to assess Project impacts to water quality; (2) a reporting schedule; (3) adaptive management measures based on water quality monitoring results; and (4) provisions for collection and submittal of water quality data to inform the Licensee's implementation of a water quality compliance schedule (Condition 2). Additionally, the WQMP shall describe: field sampling and analytical methods; monitoring locations; types of sampling (e.g., continuous, grab) and frequency by the category (as enumerated below); pre-drawdown monitoring; quality assurance plan and quality control measures; sediment load quantification; reporting and adaptive management; and other Project-related monitoring.

[19] The KRRC submitted the California Water Quality Monitoring Plan for approval as part of its request for an amendment of the Project water quality certification.

Field Sampling and Analytical Methods

The Licensee shall implement field sampling and monitoring methods consistent with the State of California's Surface Water Ambient Monitoring Program or equivalent methods approved by the Deputy Director. The Licensee shall use analytical methods that comply with Code of Federal Regulations, title 40, part 136, or methods approved by California's Environmental Laboratory Accreditation Program (ELAP), where such methods are available. Samples that require laboratory analysis shall be analyzed by ELAP-certified laboratories.

Types of Sampling and Frequency by Category

At a minimum, the WQMP shall identify the parameters and sampling frequency[~~19~~**20**] for the three categories of sampling outlined below. Water quality monitoring shall be implemented at the noted frequency or more often.

Category 1: Continuous Water Quality Monitoring

The Licensee shall continuously monitor the following water quality parameters:

(1) dissolved oxygen (DO) in milligrams per liter (mg/L) and percent saturation;
(2) water temperature;
(3) turbidity;
(4) conductivity; and
(5) pH.

Category 1 Frequency: At a minimum, 30-minute interval recordings.

Category 2: Water Quality Grab Samples

The Licensee shall collect and analyze water quality grab samples for the following parameters:

(1) total nitrogen;
(2) nitrate;
(3) nitrite;
(4) ammonia
(5) total phosphorus;
(6) particulate organic phosphorus;
(7) orthophosphate;
(8) particulate organic carbon;
(9) dissolved organic carbon;
(10) chlorophyll-a (beginning May 1 following drawdown activities and continuing annually from May 1 through October 31);
(11) turbidity;

[~~19~~**20**] See pre-drawdown monitoring below for minimum monitoring frequency prior to drawdown.

(12) microcystin (beginning May 1 following drawdown activities and continuing annually from May 1 through October 31);
(13) suspended sediment concentrations;
(14) methylmercury (only at Klamath River monitoring locations below Copco No. 1);
(15) settleable solids; and
(16) particulate and dissolved aluminum (only at Klamath River monitoring locations below Iron Gate).

Category 2 Frequency: At a minimum, monthly (with the exception of suspended sediment concentrations), at approximately the same time of day, during and following drawdown. For suspended sediment concentrations, monitoring shall occur every two weeks.

Category 3: Klamath Riverbed Sediment Grab Samples

The Licensee shall collect and analyze sediment samples from the Klamath Riverbed prior to and following dam decommissioning. At a minimum, sediment samples shall be analyzed for the following parameters:

(1) arsenic;
(2) lead;
(3) copper;
(4) nickel;
(5) iron;
(6) aluminum;
(7) dioxin;
(8) cyanide;
(9) mercury;
(10) ethyl benzenes;
(11) total xylenes;
(12) dieldrin;
(13) 4,4'-dichlorodiphenyltrichloroethane (DDT);
(14) 4,4'-dichlorodiphenyldichloroethane (DDD);
(15) 2,3,7,8-tetrachlorodibenzodioxin (TCDD);
(16) 4,4'-dichlorodiphenyldichloroethylene (DDE); and
(17) 2,3,4,7,8-pentachlordibenzofuran (PECDF).

Category 3 Frequency: One monitoring event prior to drawdown activities[21~~20~~] and one event within 12 to 24 months of completing drawdown activities.

Monitoring Locations (Categories 1 through 3)
The Licensee shall consider the following when selecting monitoring locations: existing water quality monitoring stations in the Klamath River Basin, site access, land use, and

[21~~20~~] In lieu of collecting additional pre-drawdown [in-reservoir] samples, the Licensee may rely on the results of previously-analyzed sediment samples, to the extent they provide the necessary information.

input received during consultation. Whenever feasible, the Licensee shall select monitoring locations at or near existing water quality monitoring locations. At a minimum, the Licensee shall monitor at the following locations:

Category 1 (Continuous Water Quality Monitoring) and Category 2 (Water Quality Grab Samples[22]~~21~~) shall be conducted at the following locations:

- Klamath River at or near United State Geological Survey (USGS) gage no. 11509500 (below Keno)
- Klamath River at or near USGS gage no. 11510700 (below J.C. Boyle)
- Klamath River upstream of Copco No. 1 Reservoir, and downstream of Shovel Creek **(Category 2 only)**;
- Klamath River downstream of Copco No. 2 Powerhouse, no further downstream than the Daggett Road bridge crossing of the Klamath River;
- Klamath River at or near USGS gage no. 11516530 (below Iron Gate);
- Klamath River at or near Walker Bridge (Category 1 monitoring only);
- Klamath River at or near USGS gage no. 11520500 (below Seiad Valley);
- Klamath River at or near USGS gage no. 11523000 (Orleans);
- Klamath River at or near USGS gage no. 11530500 (Klamath); and
- Klamath Estuary near the mouth of the Klamath River.

Category 3 (Klamath Riverbed Sediment Grab Samples) shall be collected at the following locations[23]~~22~~:

- Klamath River upstream of Copco No. 1 Reservoir and downstream of Shovel Creek;
- Three locations in the Copco No. 1 Reservoir footprint, in areas where sediments will likely be terraced. If terracing does not occur at the previously sampled location, the sample location shall be moved to a location with terraced sediments;
- Klamath River downstream of Copco No. 2 Powerhouse, no farther downstream than the Daggett Road bridge crossing of the Klamath River;
- Three locations in the Iron Gate Reservoir footprint, in areas where sediments will likely be terraced. If terracing does not occur at the previously sampled location, the sample location shall be moved to a location with terraced sediments;
- Klamath River at or near USGS gage no. 11516530 (below Iron Gate);
- Klamath River at or near USGS gage no. 11523000 (Orleans); and
- Klamath Estuary.

[22]~~21~~ Samples shall be collected at the same location, or as close as possible, each time.
[23]~~22~~ Samples shall be collected at the same location, or as close as possible, each time. Locations should target slow-velocity depositional areas (eddies and backwaters) where fine sediment accumulation is most likely to occur.

Pre-Drawdown Monitoring (Categories 1 through 3)

At a minimum, prior to drawdown activities the Licensee shall monitor as follows:

- Category 1 (Continuous Water Quality Monitoring): One year of continuous monitoring at all Category 1 monitoring locations.
- Category 2 (Water Quality Grab Samples): One year with samples collected monthly, at all Category 2 monitoring locations.
- Category 3 (Klamath Riverbed Sediment Grab Samples): One collection event at all Category 3 monitoring locations, except as specified in Footnote **21**~~20~~.

Quality Assurance Project Plan

The Licensee shall develop a Quality Assurance Project Plan (QAPP) using the State Water Board's and United States Environmental Protection Agency's (USEPA's) guidance resources to describe the Project's monitoring goals, data needs and assessment, responsible individuals, quality assurance plan, equipment maintenance, quality control measures, and reporting deadlines. The QAPP shall be submitted as part of the WQMP.

Sediment Load Quantification

The Licensee shall submit reports to the Deputy Director describing the status of sediment movement at 12 and 24 months, respectively, following completion of drawdown activities. The reports shall: (a) quantify the amount of sediment present in each Project reservoir footprint; (b) quantify the total amount of sediment exported from the Project reservoirs; (c) quantify the amount of sediment that has settled in the Klamath River between Iron Gate Dam and Cottonwood Creek (River Mile**24**~~23~~ [RM] 185); and (d) describe remediation activities planned or undertaken, if any. For (a) and (b) estimates shall be provided in million cubic yards, tons (dry weight), and percentage of sediment present compared to total amount of sediment present prior to drawdown. For (c) estimated sediment deposition shall be presented as total estimated quantities in million cubic yards, tons (dry weight), average depth change from pre-drawdown conditions, and percent particle size composition. The reports shall be submitted to the Deputy Director at 15- and 27-months following completion of drawdown activities, respectively.

Reporting and Adaptive Management: Prior to, during, and for a minimum of one year following completion of drawdown, the Licensee shall provide monthly monitoring reports to the State Water Board, ODEQ, and North Coast Regional Board. Monitoring and monthly reporting shall continue until otherwise approved by the Deputy Director in writing. The monthly report shall, at a minimum: 1) summarize the results of the month's monitoring; 2) be provided in a Microsoft Excel spreadsheet format and include all data collected during the reporting period; 3) highlight any exceedances of water quality objectives; 4) highlight observed trends; 5) request any changes to the WQMP; and 6) report on any adaptive management measures taken and propose any additional

24~~23~~ River Mile (RM) refers to the distance, along the Klamath River, upstream from the mouth of the Klamath River at the Pacific Ocean.

or substitute adaptive management measures to address exceedances. Any proposal to modify, reduce, or discontinue monitoring and reporting shall be included in the reports with a request for Deputy Director approval and must include information to support the request. Such requests must also comply with Tribal Water Quality Standards (Condition 22). Modifications to the WQMP or additional or substitute adaptive management measures requested by the Licensee require Deputy Director approval prior to implementation.

As noted in the Sediment Load Quantification section above, at 15 months and 27 months following completion of drawdown activities, the Licensee shall submit the reports describing the status of sediment movement.

Based on monitoring results, the Deputy Director may require the Licensee to modify monitoring parameters, frequency, methods, duration, constituents, reporting, or other elements of the WQMP, or to implement additional adaptive management measures. The Licensee shall implement changes upon receiving Deputy Director and any other required approvals. The Licensee shall file the Deputy-Director-approved updates to the WQMP with FERC. The Licensee may integrate the reporting in this condition with other reporting requirements outlined in this water quality certification (certification).

Other Project-Related Monitoring

The WQMP shall identify other monitoring efforts the Licensee plans to conduct under other plans or aspects of the Project, which include, but are not limited to monitoring under the following conditions: Sediment Deposits (Condition 4); Public Water Supplies (Condition 8); Construction: General Permit Compliance, and Water Quality Monitoring and Protection Plans (Condition 10); Hatcheries (Condition 13); and Recreation Facilities (Condition 19).

The October 2022 California Water Quality Monitoring Plan and October 2022 Quality Assurance Project Plan submitted by the KRRC to the State Water Board on October 10, 2022, satisfy the plan requirements of this condition and are hereby approved with the following modification:

- **The WQMP shall be modified to include a suspended sediment load quantification methodology: A minimum of six months prior to implementing drawdown activities, the Licensee shall submit to the Deputy Director for review and approval a methodology to quantify sediment export during and following reservoir drawdown using suspended sediment concentrations and flow measurements recorded at six USGS gage locations[25]. The Deputy Director may require modifications as part of any approval.**

  Any changes to the sediment load quantification methodology shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modification as part of any such approval. The

[25] Gage Nos. 11509500, 11510700, 11516530, 11520500, 11523000, and 11530500.

Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. Upon receiving all necessary approvals, the Licensee shall implement the sediment load quantification methodology until otherwise approved by the Deputy Director in writing.

Unless otherwise approved by the Deputy Director, the Licensee shall quantify and report suspended sediment loads in the monthly reports required by the WQMP. The Deputy Director may require modifications to the suspended sediment load quantification methodology based on reporting information.

CONDITION 2. COMPLIANCE SCHEDULE

Project activities related to drawdown and the export of reservoir sediments into the Klamath River are anticipated to result in temporary exceedances of water quality objectives related to sediment. Temporary exceedance of a water quality objective is permissible for restoration projects with long-term benefits to water quality and beneficial uses. Pursuant to this certification, discharges to the Klamath River that exceed sediment-related water quality objectives can temporarily occur during and following reservoir drawdown, dam removal, and associated sediment flushing activities. The Licensee shall demonstrate that, in the long term, these Project activities attain all sediment-related water quality objectives listed in *the Water Quality Control Plan for the North Coast Region* (North Coast Basin Plan) as outlined in this condition. Implementation of this condition shall also serve to demonstrate compliance with North Coast Basin Plan prohibitions.

The Licensee shall monitor water quality consistent with Water Quality Monitoring and Adaptive Management (Condition 1) to assess attainment of water quality objectives listed in the North Coast Basin Plan. Within 36 months of beginning drawdown, unless otherwise approved by the Deputy Director in writing, the Licensee shall submit a report that documents: 1) Project attainment of sediment-related water quality objectives over a range of flows, including high winter flows and low summer flows; and 2) post-dam removal Klamath River water quality conditions following attenuation of impacts associated with drawdown and establishment of new riverine conditions.

The Licensee shall document changes in water quality following drawdown and assess trends in water quality parameters. The Licensee's report shall evaluate the Project's effects on all California portions of the Klamath River (i.e., from California/Oregon Stateline to Klamath Estuary) ~~and Klamath River tributaries~~, including attainment of: (i) numeric water quality objectives outlined in Table 1; and (ii) narrative water quality objectives in the North Coast Basin Plan. Outlier exceedances that are localized or isolated may be accepted if the Project is consistently in attainment with water quality standards. Localized or isolated exceedances may be addressed through adaptive management associated with Restoration (Condition 14) or other measures proposed by the Licensee. If data indicate that a water quality objective is exceeded and the Licensee believes the exceedance is not a result of Project activities, the Licensee shall provide information and support demonstrating that the exceedance is not related to

Project activities. The Deputy Director will consider the information provided by the Licensee in evaluating the Licensee's attainment of water quality objectives.

Table 1: Minimum Parameters to Demonstrate Attainment of Numeric Water Quality Objectives

Parameter	Water Quality Objective*
Turbidity	Turbidity shall not be increased more than 20% above naturally occurring background levels.
pH	pH shall be between 7.0 (minimum) and 8.5 (maximum). Changes in normal ambient pH levels shall not exceed 0.2 units in waters designated marine or saline beneficial uses nor 0.5 units within the range specified above in fresh waters with designated COLD** or WARM***.
Dissolved Oxygen (percent saturation)	Stateline to the Scott River: • October 1 to March 31: 90% • April 1 to September 30: 85% Scott River to Hoopa: • All year: 90% saturation Downstream of Hoopa to Turwar: • June 1 to August 31: 85% • September 1 to May 31: 90% Upper and Middle Estuary: • September 1 to October 31: 85% • November 1 to May 31: 90% • June 1 to July 31: 85% • August 1 through August 31: 80%
Temperature	Elevated temperature waste discharges into COLD** interstate waters are prohibited. Thermal waste discharges having a maximum temperature greater than 5°Fahrenheit above natural receiving water temperature are prohibited. At no time or place shall the temperature of WARM*** intrastate water be increased more than 5°Fahrenheit above natural receiving water temperature.
Specific Conductance	Klamath River above Iron Gate Dam and including Iron Gate and Copco Reservoirs: • 275 micromhos (50% upper limit)****; and • 425 micromhos (90% upper limit)***** Middle Klamath River below Iron Gate Dam: • 275 micromhos (50% upper limit); and

Parameter	Water Quality Objective*
	• 350 micromhos (90% upper limit) Lower Klamath River: • 200 micromhos (50% upper limit); and • 300 micromhos (90% upper limit)

* Naturally occurring background levels, for the purpose of numeric water quality objectives in Table 1, are defined as the post-dam-removal condition of the Klamath River with successful implementation of revegetation and bank stabilization. It does not include discharges from construction or restoration activities, including failures of vegetation and/or bank stabilization.

** COLD is defined as Cold Freshwater Habitat uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

*** WARM is defined as Warm Freshwater Habitat uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

**** 50% upper and lower limits represent the 50 percentile values of the monthly means for the calendar year. 50% or more of the monthly means must be less than or equal to an upper limit and greater than or equal to a lower limit.

***** 90% upper and lower limits represent the 90 percentile values of the monthly means for the calendar year. 90% or more of the monthly means must be less than or equal to an upper limit and greater than or equal to a lower limit.

At 32 months following the beginning of drawdown, the Licensee shall submit an assessment of whether Project activities are anticipated to result in exceedance of a water quality objective(s) beyond 36 months following the beginning of Project drawdown. The assessment shall be submitted to the Deputy Director and the Executive Officer of the North Coast Regional Board (Executive Officer), and consistent with Tribal Water Quality Standards (Condition 22). If the assessment indicates a high risk of continued exceedance beyond this timeline, the Licensee shall immediately commence consultation with staff from the State Water Board and North Coast Regional Board regarding the development of a report and compliance proposal for actions to address the anticipated exceedance(s). The report and proposal shall be submitted to the Deputy Director for review and approval no later than 35 months following the beginning of Project drawdown activities and shall at a minimum include:

- A summary of which water quality objective(s) and compliance location(s) continue to exceed a water quality objective(s);
- An explanation of why the water quality objective(s) continues to be exceeded in relation to Project activities;
- A description of Licensee actions taken to date to address the exceedance(s); and
- A proposal to address the water quality objective(s) exceedance and associated timeline for attainment of compliance with the water quality objective(s).

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the compliance plan upon receiving Deputy Director and any other required approvals. Any changes to the compliance plan shall be approved by the Deputy Director prior to implementation.

If the Licensee is unable to demonstrate attainment of water quality objectives within 36 months of beginning Project drawdown activities, the Licensee shall notify the Deputy Director and immediately begin implementation of the approved compliance proposal, or the approved portions of the proposal if the entire proposal has not yet been approved.

CONDITION 3. RESERVOIR DRAWDOWN

No later than six months following issuance of the FERC license surrender order, the Licensee shall prepare and submit a Reservoir Drawdown and Diversion Plan (Drawdown Plan) to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. ~~The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the Drawdown Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Drawdown Plan shall be approved by the Deputy Director prior to implementation.~~

At a minimum, the Drawdown Plan shall include:

(1) The material elements of the **drawdown plan in the November 2020 Definite Decommissioning Plan filed with FERC**~~drawdown plan presented in Section 4 of the Licensee's 2018 Definite Plan. If the Licensee proposes to change any elements material to water quality, the Drawdown Plan shall highlight such changes and provide a rationale, including any new information relied on~~;
(2) A description of the facilities that will be used to draw down the reservoirs;
(3) An updated flood frequency analysis and associated average flows;
(4) Anticipated drawdown rates for each reservoir. The drawdown rate for each reservoir shall be determined using best available science and consider any potential slope instability issues;
(5) Drawdown scenarios for different water years (e.g., wet, dry, etc.);
(6) Construction schedule, including anticipated schedule for drawdown, and each reservoir's anticipated drawdown start and end dates;
(7) Anticipated total (drawdown and inflow) and drawdown only discharge rates (cubic feet per second [cfs]) associated with each structure (e.g., spillways, diversion tunnels, outlets, etc.);
(8) Public notice of Project schedule and potential impacts, including but not limited to closure of reservoirs, recreation facilities, and impacts to water quality;
(9) Surface water elevation at which each reservoir is considered drawn down;
(10) A detailed description of all structures related to reservoir operations that are proposed to be removed during drawdown;
(11) Compliance with cofferdam requirements in this condition, and a detailed description of cofferdams **or equivalent barriers** that will be installed as part of

drawdown that includes locations, timing and duration of installations, and other information related to how the installation and removal of cofferdams **or equivalent barriers** will be coordinated to limit impacts;

(12) **A description of the coordination process with the United States Bureau of Reclamation, National Marine Fisheries Service (NMFS), and United States Fish and Wildlife Service (USFWS) for any potential operation changes to the Klamath Irrigation Project needed to implement the Project;** ~~A detailed description of operations required to maintain reservoir water at the gated spillway crest elevation on Copco No. 1 Dam between the conclusion of the first phase and initiation of the second phase of drawdown. (The two phases of Copco No. 1 Reservoir drawdown are described below.);~~

(13) Detail on how long Project powerhouses are anticipated to be operational during drawdown of the reservoirs; ~~and~~

(14) An overview of the sequence of drawdown activities for all four reservoirs, including a detailed sequence of how drawdown activities will be implemented at each reservoir~~.~~**; and**

(15) A discussion of drawdown criteria, drawdown and diversion procedures, alternative drawdown procedures, drawdown monitoring plans, and drawdown implementation plans.

~~Cofferdams:~~ Construction areas in active streams shall use cofferdams**, construction pads,** or equivalent barriers to isolate construction areas from instream flows. Instream water shall be routed around the isolated construction area either by pipe or by isolating the stream in phases so that construction does not impede stream flow around the construction area. In addition, all dewatering pump intakes shall be screened to avoid potential impacts to fish and all bypass routes (e.g., pipelines, outlets, etc.) shall be properly removed or sealed upon completion of Project activities unless otherwise approved by the Deputy Director as part of review and approval of the Drawdown Plan. Any fish entrained by a Project cofferdam shall be safely relocated.

The Licensee shall notify the Deputy Director, in writing, within 24 hours of initiation and conclusion of drawdown activities at each reservoir. The Licensee shall notify the Deputy Director within 72 hours of knowledge that reservoir drawdown has the potential to be delayed or extended while still meeting the requirements outlined in this certification. The notification shall include the reason for the delay or extension and a proposed revised drawdown schedule that complies with this condition. The Deputy Director may require modifications to the proposed revised drawdown schedule. Development of a proposed revised drawdown schedule shall include consultation with State Water Board staff.

The California Reservoir Drawdown and Diversion Plan, dated July 2022, submitted by the KRRC to the State Water Board on July 28, 2022, as amended by the KRRC's October 10, 2022, supplemental filing, satisfy the Drawdown Plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any future changes to the Drawdown Plan shall be approved by the Deputy

Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any such Deputy Director-approved updates to the Drawdown Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Drawdown Plan upon receipt of all required approvals.

Pre-drawdown and drawdown activities described in the Drawdown Plan that could impact water quality (e.g., building the access construction pads below the spillway, dredging the low-level outlet tunnel approach channel at Copco 1, cleaning and exercising the Iron Gate diversion gate) shall be covered by a Deputy Director-approved site-specific water quality monitoring and protection plan(s) as defined in Condition 10 of this certification. The Licensee shall comply with Condition 10 requirements for construction-related pre-drawdown and drawdown work with the potential to impact water quality.

~~Drawdown of the reservoirs shall occur over no more than a single six-month period between November 1 (earliest date to start drawdown) and May 1 of the following year (latest date to conclude drawdown), and shall occur as more specifically outlined below:~~

- ~~Copco No. 1 Reservoir drawdown is divided into two timeframes based on the rate of drawdown[24] allowed at specific reservoir elevations.~~
  - ~~The first phase of Copco No. 1 Reservoir drawdown, from its normal operating reservoir elevation (2,609.5 feet) to gated spillway (crest elevation 2,597.0 feet), shall start no sooner than November 1 and no later than December 15. The maximum drawdown rate during the initial drawdown of Copco No. 1 Reservoir is two feet per day, unless otherwise approved by the Deputy Director based on new information provided in the Drawdown Plan. The initial phase of Copco No. 1 Reservoir drawdown shall be concluded no later than January 1.~~
  - ~~The second phase of Copco No. 1 Reservoir drawdown, from the gated spillway until empty, shall not start until at least two weeks after Iron Gate Reservoir drawdown begins and shall start no later than February 15 of the year directly following the initial drawdown of Copco No. 1 Reservoir. Copco No. 1 Reservoir drawdown shall conclude no later than March 15 of the year in which the second phase of Copco No. 1 Reservoir drawdown is initiated. The maximum drawdown rate for the second phase of Copco No. 1 Reservoir drawdown shall be five feet per day, unless otherwise approved by the Deputy Director based on new information provided in the Drawdown Plan.~~

[24] ~~For purposes of this certification, the actual drawdown rates may be less than what is described in the Drawdown Plan and may even be negative during storm events due to increased inflow to the reservoirs. The drawdown rates shall be sufficient to end drawdown of Copco No. 1 Reservoir by March 15 of the year directly following the initiation of Copco No. 1 Reservoir drawdown.~~

~~The maximum additional discharge below Copco No. 1 Dam associated with Copco No. 1 Reservoir drawdown shall be limited to 6,000 cfs, unless otherwise approved by the Deputy Director based on new information provided in the Drawdown Plan. If initial drawdown of Copco No. 1 Reservoir has not started by December 15, drawdown activities shall be delayed until at least November 1 of the following calendar year.~~

- ~~Iron Gate Reservoir drawdown shall start no sooner than January 1 of the year directly following the initiation of Copco No. 1 Reservoir drawdown and no later than January 15 of the same year. Iron Gate drawdown shall conclude no later than March 15 of the same year Iron Gate drawdown is initiated. The maximum drawdown rate for Iron Gate shall be five feet per day. The maximum additional discharge below Iron Gate Dam associated with Iron Gate Reservoir drawdown activities shall be limited to 6,000 cfs, unless otherwise approved by the Deputy Director based on new information provided in the Drawdown Plan.~~

- ~~J.C. Boyle Reservoir drawdown shall start no sooner than January 1 and no later than February 1 of the year directly following the initiation of Copco No. 1 drawdown. J.C. Boyle Reservoir drawdown shall conclude no later than March 15 of the same year in which J.C. Boyle drawdown is initiated.~~

- ~~Copco No. 2 Reservoir drawdown shall conclude no later than May 1 of the year following initiation of Copco No. 1 Reservoir drawdown.~~

Removal of the Project facilities shall begin and be completed, to the extent feasible, during drawdown to minimize the duration of sediment releases, and to comply with the schedule set forth in the Compliance Schedule (Condition 2) of this certification. Additionally, drawdown and dam deconstruction shall be conducted to ensure instream flow requirements[**26**~~25~~] below Iron Gate Dam are maintained.

CONDITION 4. SEDIMENT DEPOSITS

Unless otherwise approved in writing by the Deputy Director, by no later than December of the ~~first~~ **second** full calendar year following completion of drawdown activities, the

[**26**~~25~~] The United States Bureau of Reclamation's (USBR) Klamath River Project must meet flows below Iron Gate Dam that are ~~specified in~~**required under** the Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act essential fish habitat **requirements.** ~~*response for Klamath Project operations from April 1, 2019 through March 31, 2024 (NMFS 2019)* and the *Biological Opinion on the Effects of the Proposed Klamath Project Operations from April 1, 2019, through March 31, 2024, on the Lost River Sucker and the Shortnose Sucker (USFWS, 2019)*~~(jointly 2019 BiOp). ~~USBR has released two Biological Assessments (in February and April 2020) for amended operations, including amended flow requirements: one of these proposals – or other amendments – could occur prior to drawdown.~~ Drawdown shall not interfere with implementation of the required instream flow requirements that are current at this time.

Licensee shall assess and remediate (if appropriate) visibly obvious sediment deposits along the Klamath River from below Iron Gate Dam to the mouth of the Klamath Estuary that may have been deposited during reservoir drawdown activities. Assessment is limited to sediment deposits on parcels with a current or potential residential or agricultural (e.g., row crop) land use, for which the property owner has notified the KRRC of a potential sediment deposit that may be associated with reservoir drawdown activities.

Within 60 days of property owner notification, visibly obvious sediment deposits shall be assessed by the Licensee to determine if the deposits are consistent with physical sediment properties associated with Project reservoir sediments. Sediment deposits consistent with the physical sediment properties of Project reservoirs shall be tested for arsenic or remediated without testing per the requirements of this condition. If testing is performed, soil samples in the vicinity of the deposited sediments (e.g., from the adjacent riverbank and/or floodplain), shall also be tested for arsenic to determine the local background arsenic concentrations. No additional actions or remediation shall be required if the measured arsenic concentrations in the deposited sediments are less than or equal to measured local background soil concentrations for arsenic. If the concentration of arsenic in the deposited sediments on the river banks and floodplain of the Klamath River exceed local background levels and USEPA or California Environmental Protection Agency human health residential screening levels, the deposited sediments shall be remediated to local background levels through removal of the deposited sediments or soil capping, if sediment removal is infeasible or poses a greater risk than soil capping.

For Sediment Deposits that Require No Further Action. Within 30 days of a determination that a reported deposit does not require remediation, either because it is not consistent with reservoir sediment deposits or because sediment testing does not indicate a need for further action, the Licensee shall notify the property owner and submit a report to the Deputy Director. At a minimum, the report shall include the location of the reported deposit, a summary of actions taken, and support for the determination that no further action is needed. If sampling was performed, the report shall also include, at a minimum:

- Estimated quantity of the reported sediment deposit;
- Arsenic testing method(s) used and the number, location, and depth of samples collected from the reported sediment deposit and surrounding soils (background); and
- Arsenic concentrations associated with each sample.

The Deputy Director may require additional testing, remediation, or other actions based on the report. The Licensee shall provide additional information upon request by the Deputy Director.

For Sediment Deposits that Require Further Action. Within 14 days following completion of the inspection of a reported sediment deposit that requires further action (including any associated sediment sampling results), the Licensee shall submit a Sediment Deposit Remediation Plan to the Deputy Director for review and approval. At a minimum, the Sediment Deposit Remediation Plan shall include:

- Estimated location and quantity of the reported sediment deposit;
- If testing was performed, the arsenic sediment testing methods used and the number, location, depth, and concentration associated with each sediment samples collected from the reported sediment deposit and surrounding soils (background); and
- Proposed remediation actions, including a schedule for remediation and any proposed post-remediation soil sampling. If soil capping is proposed, the Licensee shall provide documentation supporting why soil removal is infeasible or poses a greater risk than soil capping.

~~The Deputy Director may require modifications to the Sediment Deposit Remediation Plan as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the Sediment Deposit Remediation Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Sediment Deposit Remediation Plan shall be approved by the Deputy Director prior to implementation.~~

Within 30 days of completing remediation activities, the Licensee shall provide the property owner and Deputy Director with a report documenting completion of the remediation. At a minimum, the report shall include the location of the remediation, a summary of action(s) taken including the quantity of soil removed or area capped, and support for the determination that no further remediation is needed. Additionally, if post-remediation soil sampling was performed, the report shall include, at a minimum: arsenic soil testing method(s) used; the number, location, and depth of soil samples collected and their relation to the area remediated; and the associated arsenic soil concentrations.

The Deputy Director may require additional testing, remediation, or other actions based on the report. The Licensee shall provide additional information upon request by the Deputy Director.

The California Sediment Deposit Remediation Plan, dated July 2022, submitted by the KRRC to the State Water Board on July 14, 2022, as amended by the KRRC's October 10, 2022, supplemental filing establishes a framework that incorporates the general requirements of this condition. Any site-specific remediation needed to comply with this condition, as well as any changes to the California Sediment Deposit Remediation Plan, shall be submitted to the Deputy Director for review and approval as an update to the California Sediment Deposit Remediation Plan. The Deputy Director may require modifications to the California Sediment Deposit

Remediation Plan as part of any approval of such an update. The Licensee shall file any Deputy Director-approved updates, together with any required modifications, with FERC. The Licensee shall implement the California Sediment Deposit Remediation Plan upon receipt of all required approvals.

CONDITION 5. ANADROMOUS FISH PRESENCE

The purpose of fish presence surveys is to ensure that following Project implementation anadromous fish can volitionally access the Klamath River and its tributaries within and upstream of the California portion of the Hydroelectric Reach[27][26]). Accordingly, the Licensee shall conduct surveys to document anadromous fish presence and access to the tributaries and mainstem Klamath River.

No later than 24 months following issuance of a FERC license surrender order, the Licensee shall submit a Fish Presence Monitoring Plan (Fish Presence Plan) to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Fish Presence Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, and National Marine Fisheries Service (NMFS). The Licensee shall solicit comments from the agencies listed above. Additionally, the Fish Presence Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Fish Presence Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Fish Presence Plan upon Deputy Director and any other required approvals. Any changes to the Fish Presence Plan shall be approved by the Deputy Director prior to implementation.

At a minimum, the Fish Presence Plan shall include: (1) a list of anadromous fish species covered by the plan; (2) California survey reaches; (3) timing, frequency, and duration of surveys; (4) survey methods; and (5) reporting. Additional information on the minimum requirements for each of these plan elements is provided below. Additionally, the Fish Presence Plan may include a discussion of how the information collected under Action 1 (Tributary-Mainstem Connectivity) of the Mainstem Spawning Aquatic Resources Measure (Condition 6) will be used to inform implementation of the Fish Presence Plan.

Fish Species: The Fish Presence Plan shall, at a minimum, include surveys for the following anadromous fish species: spring-run and fall-run Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), Pacific lamprey (*Entosphenus tridentatus*), and steelhead (*Oncorhynchus mykiss*).

[27][26] The Hydroelectric Reach refers to the stretch of the Klamath River that begins at the confluence of J.C. Boyle Reservoir with the Klamath River and continues to the base of Iron Gate Dam, and includes both J.C. Boyle and Copco No. 2 bypass reaches, and tributaries in this reach such as Jenny Creek, Fall Creek, Spencer Creek, and Shovel Creek.

California Survey Reaches: Unless otherwise approved by the Deputy Director in writing, the Licensee shall survey, in California, all tributaries with potentially viable anadromous fish habitat that have a confluence in the Hydroelectric Reach, as well as the mainstem Klamath River to the state line to determine if anadromous fish are present. Specific survey reaches of the mainstem Klamath River shall include areas upstream of the California Project reservoir footprints.

Timing, Frequency, and Duration: Fish presence surveys shall begin in **the fall** ~~the third year~~**of the first year** following the completion of drawdown. Fish presence surveys shall be conducted for at least four consecutive years and until otherwise approved or modified by the Deputy Director. The Licensee~~, through annual reporting (discussed below),~~ may request to reduce the duration or scope of surveys based on new information (e.g. survey results that substantiate either anadromous fish presence or lack of fish passage barriers related to Project implementation).

Survey Methods: The Licensee shall propose appropriate survey methods (e.g., carcass surveys, snorkel surveys, etc.) to evaluate anadromous fish presence. Information provided shall include: number of days required for surveys with approximate field crew size; equipment that will be used to assess fish presence; global positioning system (GPS) and map of survey areas; field documentation methods (e.g., data sheets, photo documentation); and survey timing. The results of tributary fish presence surveys may be used to determine the need for surveys of the mainstem Klamath River (e.g., anadromous fish present in tributaries above Copco No. 1 Reservoir footprint would indicate anadromous fish can access portions of the mainstem Klamath River below that point, eliminating the need for additional evaluation). A minimum of four weeks prior to conducting fish presence surveys, the Licensee shall notify staff from the State Water Board, North Coast Regional Board, CDFW, and NMFS so that agency staff may participate in the surveys, if desired.

Reporting: The Licensee shall report fish presence survey results annually to the Deputy Director.

Annual reports shall, at a minimum, include:

(1) A summary of the fish presence results; and
(2) An overall assessment of fish presence in the newly accessible Klamath River and tributaries. The Licensee shall consider fish return projections and observations (e.g., barrier) as part of the fish surveys in the reports.

Additionally, the fourth annual report shall, at a minimum, include:

(1) An analysis of whether any encountered fish passage impediment is Project-related; and
(2) Proposed actions to remedy any Project-related impediments to anadromous fish.

The Deputy Director may require the Licensee to submit proposed actions to address a fish passage impediment that the Deputy Director finds is Project-related. Prior to implementing any proposed actions, the Licensee shall receive approval from the

Deputy Director. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the action upon receipt of Deputy Director and any other required approvals.

The Fish Presence Monitoring Plan, dated August 2022, submitted by the KRRC to the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Fish Presence Monitoring Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy-Director-approved updates to the Fish Presence Monitoring Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Fish Presence Monitoring Plan upon Deputy Director and any other required approvals.

CONDITION 6. AQUATIC RESOURCES

~~The Licensee shall implement the Aquatic Resource (AR) Measures: as proposed in Appendix I of the 2018 Definite Plan (Appendix I); updated by the Licensee's October 10, 2018 letter to the State Water Board; and based on the requirements presented in this condition.~~ **The Licensee shall implement the three Aquatic Resource (AR) measures outlined below and associated plans that are part of the Licensee's Aquatic Resources Management Plan, dated August 2022, as submitted to the State Water Board on August 3, 2022.** ~~Except to the extent changes are required by this condition, the Licensee shall submit to the Deputy Director any proposed changes in the material terms of the measures described in the June 2018 Appendix I and October 2018updates, along with an explanation of the reason for the proposed change and any additional information relied on.~~ The Deputy Director may approve, deny, or conditionally approve any changes to the AR Measures proposed by the Licensee.

Mainstem Spawning Aquatic Resource Measure

The Mainstem Spawning AR Measure includes two actions: 1) Tributary-Mainstem Connectivity; and 2) Spawning Habitat Evaluation.

Action 1: Tributary-Mainstem Connectivity. No later than six months following issuance of a FERC license surrender order and prior to Project implementation, the Licensee shall submit the Tributary-Mainstem Connectivity Plan **to the Executive Director of the State Water Board** ~~for~~ **or** Deputy Director **for** review and approval. The Tributary-Mainstem Connectivity Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, ODEQ, NMFS, and CDFW. ~~The Licensee shall solicit comments from the agencies listed above. Additionally, the Tributary-Mainstem Connectivity Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the~~

~~Deputy Director-approved Tributary-Mainstem Connectivity Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Tributary-Mainstem Connectivity Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Tributary-Mainstem Connectivity Plan shall be approved by the Deputy Director prior to implementation.~~

The Tributary-Mainstem Connectivity Plan shall assess tributary confluences with the Klamath River for connectivity that provides coho salmon, Chinook salmon, steelhead, and Pacific lamprey passage. At a minimum, the Tributary-Mainstem Connectivity Plan shall include: proposed monitoring elements such as methods, timing, duration, frequency, and locations; and proposed reporting. The Tributary-Mainstem Connectivity Plan shall also include ~~potential actions the~~**a framework to develop adaptive management measures that the** Licensee may implement to remove Project-related obstructions to tributary connectivity and fish passage. The Tributary-Mainstem Connectivity Plan shall monitor and address tributary connectivity and fish passage in ~~at least the tributaries identified in Action 1 of the Mainstem Spawning AR Measure (i.e., at least four~~**one** tributar**y**[28]~~ies~~ in the Hydroelectric Reach and five tributaries from below Iron Gate to Cottonwood Creek~~), as well as all newly created stream channels that were previously inundated by Project reservoirs prior to drawdown~~.

The Tributary-Mainstem Connectivity Plan shall include monitoring for at least two years directly following the completion of drawdown activities, and within one month following a five-year flow event[~~27~~~~28~~**29,30**] unless it is unsafe for field crews, in which case monitoring shall be conducted as soon thereafter as safe conditions occur.

Reporting: The Licensee shall submit annual reports to the Deputy Director. Annual reports shall, at a minimum, include:

(1) A summary of monitoring results;
(2) An overall assessment of fish passage in the newly accessible Klamath River and tributaries; and
(3) A summary of tributary obstructions that limit fish passage and proposed remedial actions.

The Tributary-Mainstem Connectivity Plan, dated August 2022, as submitted by the KRRC for review and approval by the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this action and is hereby approved. The KRRC shall file the

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[28] Additional tributaries in the Hydroelectric Reach will be assessed for connectivity through implementation of the Reservoir Area Management Plan (Condition 14). Connectivity assessment includes newly created stream channels that were previously inundated by Project reservoirs prior to drawdown.

[**29**~~27~~] A 5-year flow event is 10,908 cfs as recorded at USGS gage no. 11516530 (below Iron Gate).

[**30**~~28~~] A 5-year flow event may occur outside of the two years following completion of drawdown, in which case the monitoring described here would be required.

approved documents with FERC within 30 days of this certification amendment. Any changes to the Tributary-Mainstem Connectivity Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Tributary-Mainstem Connectivity Plan upon receipt of all required approvals.

Action 2: Spawning Habitat Evaluation. The Licensee shall implement spawning **habitat** ~~gravel~~ surveys ~~as proposed in Action 2 of the Mainstem Spawning AR Measure~~. The Licensee shall develop a Spawning Habitat Availability Report and Plan (SHARP) that: (i) **includes field surveys and remote sensing efforts to quantify available spawning habitat prior to and following drawdown in the Hydroelectric Reach and several tributaries[31]; (ii)** summarizes the survey of newly-accessible anadromous fish spawning habitat; and ~~(ii)~~ **(iii)** ~~proposes actions to augment~~ **includes potential actions that the Licensee may implement to augment** spawning habitat in the mainstem Klamath River and its tributaries **if needed**. The SHARP shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, NMFS, ~~United States Fish and Wildlife Service (~~USFWS~~)~~, ODEQ, and Oregon Department of Fish and Wildlife. The SHARP shall be submitted to the **Executive Director of the State Water Board or the** Deputy Director for review and approval no later than December 31 of the year in which drawdown is completed. ~~The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved SHARP, together with any required plan modifications, with FERC. The Licensee shall implement the actions identified in the Deputy-Director-approved SHARP upon receipt of Deputy Director and any other required approvals. Any changes to the SHARP shall be approved by the Deputy Director prior to implementation.~~

~~The SHARP shall~~**If it is necessary for the Licensee to take action to augment spawning habitat based on the results of the survey of spawning habitat (i.e., if the spawning habitat target metrics [i.e., tributary – 4,700 square yards, mainstem – 44,100 square yards] identified in Section 2 of the SHARP are not met), the Licensee shall update the SHARP to** include the following elements for proposed actions to improve spawning habitat: 1) a detailed description of each proposed action; 2) locations of the proposed actions; 3) duration and timing (e.g., season) for implementation of the proposed actions; **and** 4) **assessment of estimated spawning habitat benefits resulting from the proposed actions compared to the targets set forth in the SHARP.** ~~assessment of estimated spawning~~

[31] Tributaries include Jenny Creek, Fall Creek, Shovel Creek, and Spencer Creek. If the spawning habitat tributary target of 4,700 square yards is achieved prior to surveying each tributary, tributary monitoring may be discontinued. If the spawning habitat tributary target is not met in the initial survey effort, additional tributaries that will be surveyed include Camp Creek, Scotch Creek, Dutch Creek, Deer Creek and/or Beaver Creek.

~~habitat benefits resulting from the proposed action compared to the targets identified in Action 2 of the Mainstem Spawning AR Measure; and 5) reporting on SHARP implementation. In the SHARP, t~~**T**he Licensee shall evaluate a range of actions to meet the spawning targets identified in ~~Action 2 (Table 3-2) of the Mainstem Spawning AR Measure~~**Section 2 of the SHARP.** When spawning gravel augmentation is not appropriate~~32~~[29], the Licensee shall evaluate and propose other actions to improve spawning and rearing habitat that meet the targets identified in ~~Table 3-2 (Action 2 of the Mainstem Spawning AR Measure)~~**Section 2 of the SHARP**. Other actions may include: installation of large woody material, riparian planting for shade coverage, wetland construction or enhancement, and cattle exclusion fencing.

Reporting: The Licensee shall submit annual reports to the Deputy Director no later than April 1 of the following year for as long as the Licensee is conducting surveys or implementing spawning habitat improvement actions. Annual Reports shall, at a minimum, include:

(1) A summary of monitoring results; and
(2) A summary of the actions, if needed, implemented to improve spawning habitat.

The Spawning Habitat Availability Report and Plan, dated August 2022, as submitted for review and approval to the State Water Board on August 11, 2022, satisfies the requirements of this action and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the SHARP shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the SHARP upon receipt of all required approvals.

Juvenile Outmigration Aquatic Resource Measure

The Juvenile Outmigration AR Measure includes three actions: 1) Mainstem Salvage of Overwintering Juvenile Salmonids; 2) Tributary-Mainstem Connectivity Monitoring; and 3) Rescue and Relocation of Juvenile Salmonids ~~and Pacific Lamprey~~ from Tributary Confluence Areas.

Action 1: Mainstem Salvage of Overwintering Juvenile Salmonids. Except as modified by this condition, the Licensee shall implement the overwintering juvenile salmonid salvage and relocation efforts ~~as proposed~~ **described** in Action 1 of the ~~Juvenile Outmigration~~ **Outmigrating Juveniles** AR Measure **in the Lower Klamath Project Biological Opinion**. The Licensee shall ~~survey~~ **evaluate** sites in the Klamath River between Iron Gate Dam (RM 192.9) and the Trinity River (RM 43.4) **prior to reservoir drawdown to identify salvage locations based on the presence and relative abundance of juvenile coho salmon and the suitability of such sites for**

~~32~~[29] Gravel augmentation shall only be performed in the mainstem Klamath River, unless the Deputy Director-approved SHARP allows otherwise.

salvage~~during the pre- and early-drawdown surveys described in Action 1 of the Juvenile Outmigration AR Measure to evaluate the presence and relative abundance of yearling coho salmon~~. Site selection and ~~survey~~ **salvage** methods shall be developed in consultation with staff from CDFW, NMFS, State Water Board, and North Coast Regional Board, and implemented as approved by the Deputy Director. **Prior to drawdown, the Licensee shall relocate juvenile coho salmon to off-channel ponds. A technical memorandum identifying target capture locations and methods of salvage of overwintering juvenile coho salmon shall be submitted to NMFS, CDFW, and the State Water Board at least six months prior to salvage.**

Action 2: Tributary-Mainstem Connectivity Monitoring. **The Licensee shall implement the Tributary-Mainstem Connectivity Plan approved under the Mainstem Spawning AR Measure section of this condition above.** ~~The Licensee shall implement Action 2 of the Juvenile Outmigration AR Measure as proposed, with the same modifications identified in Action 1 of the Mainstem Spawning AR Measure, above.~~

Action 3: Rescue and Relocation of Juvenile Salmonids ~~and Pacific Lamprey~~ from Tributary Confluence Areas. No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan (Juvenile Salmonid Plan) to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Juvenile Salmonid Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, NMFS, and CDFW. ~~The Licensee shall solicit comments from the agencies listed above. Additionally, the Juvenile Salmonid Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Juvenile Salmonid Plan, together with any required plan modifications, with FERC prior to initiating drawdown. The Licensee shall implement the Juvenile Salmonid Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Juvenile Salmonid Plan shall be approved by the Deputy Director prior to implementation.~~

At a minimum, the Juvenile Salmonid Plan shall include:

(1) Methods that will be used to find and relocate juvenile salmonids ~~and lamprey~~;
(2) Potential relocation areas and/or criteria that will be used to identify potential relocation areas;
(3) Detailed description of water quality monitoring to be performed at each confluence of the Klamath River and the 13 tributaries[33][~~30~~] listed in Action 3 of the Juvenile Outmigration AR Measure. In addition, the plan shall include water

[33][~~29~~] The 13 tributaries are: Bogus Creek, Dry Creek, Cottonwood Creek, Shasta River, Humbug Creek, Beaver Creek, Horse Creek, Scott River, Tom Martin Creek, O'Neil Creek, Walker Creek, Grider Creek, and Seiad Creek.

quality triggers for implementation of ~~lamprey and~~ juvenile salmonid relocation efforts. The Licensee shall perform the water quality monitoring required here consistent with the sampling methods and quality control procedures identified in the Deputy-Director-approved WQMP and its QAPP (Condition 1). The Licensee shall provide the proposed frequency, duration, and location of water quality monitoring that will be conducted under Action 3 of the Juvenile Outmigration AR Measure. The Licensee may use water quality monitoring results from implementation of the WQMP (Condition 1), as applicable. The plan shall identify what monitoring results from Condition 1 may be used under this action;

(4) Detailed description of proposed rescue efforts that includes: duration, method of rescue, ~~target number of fish,~~ locations for capture and relocation; **and**

~~(5) Provisions for incidental rescue and relocation of Pacific lamprey encountered in tandem with any juvenile salmonid rescue and relocation efforts: and~~

(5) ~~(6)~~ Reporting to the Deputy Director on implementation of Action 3 of the Juvenile Outmigration AR Measure within six months following implementation of rescue and relocation efforts. At a minimum, reporting shall include: a summary of the water quality data collected; any actions taken by the Licensee to rescue and relocate ~~lamprey and~~ juvenile salmonids, including number of ~~lamprey and~~ juvenile salmonids rescued (including age class), release location, and the success of such efforts.

The Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, dated August 2022, as submitted for review and approval to the State Water Board on August 11, 2022, satisfies the requirements of this action and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Juvenile Salmonid Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Juvenile Salmonid Plan upon receipt of all required approvals.

~~*Iron Gate Hatchery Management Aquatic Resource Measure*~~
~~The Licensee shall implement the Iron Gate Hatchery Management AR Measure– as listed in the Licensee's June 2018, Appendix I.~~

Suckers Aquatic Resource Measure
The Licensee shall implement the ~~Suckers AR Measure~~ **California AR-6 Adaptive Management Plan – Suckers (California Suckers Plan), dated August 2022, as submitted to the State Water Board on August 11, 2022. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the California Suckers Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any approval. The Licensee shall implement any updates to the California Suckers Plan upon Deputy Director and any other required approvals.** ~~as listed in the Licensee's June 2018, Appendix I. The Licensee shall submit the~~

~~summary reports to the Deputy Director no later than six months after each sampling event or no later than three months following issuance of the FERC license surrender order for sampling events implemented before license surrender order issuance. The Licensee shall submit summary reports to the Deputy Director detailing relocation efforts implemented under this measure no later than three months following completion of the relocation efforts.~~

~~*Freshwater Mussels Aquatic Resource Measure*~~
~~The Licensee shall implement the Freshwater Mussels AR Measure, as listed in the Licensee's October 2018 letter to the State Water Board. The Licensee shall submit summary reports to the Deputy Director detailing relocation efforts implemented under this measure no later than three months following completion of the relocation efforts~~.

CONDITION 7. REMAINING FACILITIES

No later than six months following issuance of the FERC license surrender order, and prior to Project implementation, the Licensee shall submit a Remaining Facilities Plan to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. ~~The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Remaining Facilities Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Remaining Facilities Plan upon receiving Deputy Director and any other required approvals. Any changes to the Remaining Facilities Plan shall be approved by the Deputy Director prior to implementation.~~

At a minimum, the Remaining Facilities Plan shall include:

(1) A list and description of all Project facilities and structures that will be retained during Project implementation[34~~31~~], including but not limited to facilities buried in place;
(2) An analysis of potential water quality impacts associated with remaining facilities and operations, including hazardous materials or wastes present at the facilities and the potential for erosion or runoff to surface waters;
(3) Measures the Licensee will implement to ensure remaining facilities do not contribute to water quality impairments; and
(4) Provisions to ensure that any ongoing measures will be implemented when ownership of the facilities and/or responsibility for operations is transferred to another entity.

[34~~31~~] While all remaining facilities shall be listed in the Remaining Facilities Plan, it is not necessary to include a description and other information for recreational facilities addressed under Recreation Facilities (National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order WQ 2022-0057-DWQ, NPDES No. CAS000002.) and hatcheries addressed under Hatcheries (Condition 13).

The Remaining Facilities Plan, dated December 2021, submitted to FERC on December 14, 2021, and submitted to the State Water Board for review and approval July 7, 2022, satisfies the requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Remaining Facilities Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement any updates to the Remaining Facilities Plan upon receipt of all required approvals.

CONDITION 8. PUBLIC DRINKING WATER SUPPLIES

This condition outlines provisions to ensure protection of public drinking water supplies that may be impacted by Project implementation, including drinking water supplies sourced from the Klamath River and the City of Yreka's water supply. The provisions for each of these types of water supplies are provided below.

Drinking Water Supplies Sourced from the Klamath River. No later than three months following issuance of the FERC license surrender order, and prior to Project implementation, the Licensee shall consult with community water systems, transient non-community water systems, or other drinking water providers that use Klamath River surface water for drinking water to identify appropriate measures to reduce water supply impacts associated with Project implementation. The Licensee shall ensure that Project implementation does not result in service of water that fails to meet drinking water quality standards. Potential measures shall include, as appropriate: (1) providing an alternative potable water supply; (2) providing technical assistance to assess whether existing treatment is adequate to treat the potential increase in sediments and sediment-associated contaminants to meet drinking water standards; (3) providing water treatment assistance to adequately treat Klamath River water to minimize suspended sediments and associated constituents that may impact human health; (4) ensuring that transient, non-community supplies are temporarily shut off for drinking; and/or (5) ensuring that water not intended for drinking is clearly marked as non-potable.

At least six months prior to initiating drawdown, the Licensee shall submit ~~a report~~**the California Public Drinking Water Management Plan** to the **Executive Director of the State Water Board or the** Deputy Director **for review and approval. The California Public Drinking Water Management Plan shall**~~that~~: (i) identif**y**~~ies~~ all drinking water supplies sourced from the Klamath River that may be impacted by the Project; **and** (ii) detail~~s~~ measures the Licensee will implement to protect each potentially affected water supply and why such measures are sufficient to protect the drinking water supplies~~; and (iii) documents consultation with the applicable water supplier and how any comments made on the proposed measures were addressed in the report~~. The Licensee shall implement the measures sufficiently prior to, during, and following the reservoir sediment releases to ensure protection of water supplies. The Deputy Director may require modifications or additional measures. The Licensee shall provide the

Deputy Director with a summary of its implementation of this provision within three months of concluding implementation of the measures.

City of Yreka's Water Supply. Prior to initiating drawdown of Project reservoirs, the Licensee shall **either temporarily or permanently reroute the existing City of Yreka water supply pipeline across the Daggett Road Bridge. The Licensee shall coordinate with the City of Yreka to provide an uninterrupted water supply during replacement, and the estimated water delivery outage timeframe shall be agreed upon between the City of Yreka and Licensee prior to construction, consistent with the California Public Drinking Water Management Plan.** ~~construct a new, fully operational replacement pipe for the City of Yreka's current water supply pipeline for the section of pipe that crosses Iron Gate Reservoir.~~ The new replacement pipeline section shall be connected to the existing City of Yreka water supply pipeline and installed in a location that prevents Klamath River flows during and after drawdown from affecting the City of Yreka's water supply.

Any work the Licensee undertakes to ensure that the City of Yreka water supply intake structures comply with fish screen criteria shall be completed within the water delivery outage period specified in this condition. Installation of a fish barrier that does not impact the City of Yreka's water supply and associated intake structures may be performed at an alternate time outside of the water delivery outage period.

Except as provided in this condition, the Licensee shall ensure uninterrupted water supply during replacement of the water pipeline section, any required intake structure modifications, and throughout Project implementation. A short water delivery outage is necessary to make the final connections following construction of the new pipeline. The Licensee shall limit the water delivery outage to a maximum of 12 hours or another water delivery outage timeframe agreed upon between the City of Yreka and the Licensee. The Licensee shall coordinate the water delivery outage period with the City of Yreka to ensure the City of Yreka has an adequate supply of water stored to cover the maximum water delivery outage period.

Water pipeline and intake work shall not cause impacts to water quality that exceed North Coast Basin Plan standards. If the Licensee proposes any in-water work, the Licensee shall prepare a water quality monitoring and protection plan in compliance with Condition 10 of this certification for Deputy Director review and approval.

The California Public Drinking Water Management Plan submitted to FERC on December 14, 2021, and submitted to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the California Public Drinking Water Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications,

with FERC. The Licensee shall implement any updates to the California Public Drinking Water Management Plan upon Deputy Director and any other required approvals.

CONDITION 9. AQUATIC VEGETATION MANAGEMENT

In the event chemical vegetation control is proposed to control algae or aquatic weeds, the Licensee shall consult with staff from the United States Army Corps of Engineers (USACE), CDFW, North Coast Regional Board, and State Water Board and submit a proposal to the Deputy Director for review and approval. The proposal shall include: (1) the Licensee's plans to implement chemical vegetation management, including any public noticing or additional measures proposed beyond those required in this certification; (2) the timeline for the application of chemicals and any potential impacts to beneficial uses of water, including Native American culture uses; (3) comments and recommendations made in connection with the consultation and how they were incorporated into the proposal; and (4) a description of how the proposal incorporates or addresses use of glyphosate in an aquatic formulation, avoidance of glyphosate formulations containing the surfactants POEA or R-11, and prohibition of application if precipitation is predicted within 24 hours of intended use. If another herbicide is selected for use, it shall meet the characteristics of low soil mobility and low toxicity to fish and aquatic organisms and shall be applied using low use rates (i.e., spot treatments), avoidance of application in the rain, avoidance of treatments during periods when fish are in life stages most sensitive to the herbicide(s) used, and adherence to appropriate buffer zones around stream channels as specified in Bureau of Land Management 2010[**35**~~32~~].

The Deputy Director may approve, deny, or require modifications of the proposal. The Licensee shall file any Deputy-Director-approved proposal, together with any required proposal modifications, with FERC. The Licensee shall implement the proposal upon Deputy Director and any other required approvals. Any changes to the proposal shall be approved by the Deputy Director prior to implementation.

At a minimum, the Licensee shall comply with the terms in State Water Board Order No. 2013-0002-DWQ (as amended by Orders 2014-0078-DWQ**, 2015-0029-DWQ, 2016-073-EXEC, 2017-0015-EXEC, and 2020-0037-EXEC, and any amendments thereto**), National Pollutant Discharge Elimination System (NPDES) No. CAG990005, *Statewide National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Water of the United States from Algae and Aquatic Weed Control Applications* and any amendments thereto.

[**35**~~32~~] Bureau of Land Management (BLM). 2010. Final environmental impact statement. Vegetation treatments using herbicides on BLM lands in Oregon. Volume 2-Appendices. FES 10-23 BLM/OR/WA/AE-10/077+1792. Prepared by BLM, Pacific Northwest Region, Portland, Oregon.

CONDITION 10. CONSTRUCTION GENERAL PERMIT COMPLIANCE AND WATER QUALITY MONITORING AND PROTECTION PLANS

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 2022-0057-DWQ, as applicable**), and ongoing amendments during the life of the Project.

For any ground-disturbing activities that could impact water quality (including beneficial uses) that are neither addressed by the Construction General Permit nor addressed in other conditions of this certification (e.g., Reservoir Drawdown [Condition 3], Hatcheries [Condition 13], and Restoration [Condition 14]) site-specific water quality monitoring and protection plans shall be prepared and implemented following Deputy Director approval. **Activities for which site-specific water quality monitoring and protection plans shall be prepared include, but are not limited to, Ward's Canyon-related work (Condition 19) and other pre-drawdown and drawdown construction-related work (Condition 3).** Prior to construction or other activity that could impact water quality or beneficial uses, the Licensee shall submit the water quality monitoring and protection plan to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement site-specific water quality monitoring and protection plans upon receipt of Deputy Director and any other required approvals.

Any water quality monitoring and protection plans shall include measures to control erosion, stream sedimentation, dust, and soil mass movement. The plans shall be based on actual-site geologic, soil, and groundwater conditions and at a minimum include:

(1) Description of site conditions and the proposed activity;
(2) Detailed descriptions, design drawings, and specific topographic locations of all control measures in relation to the proposed activity, which may include:
    a. Measures to divert runoff away from disturbed land surfaces;
    b. Measures to collect and filter runoff from disturbed land surfaces, including sediment ponds at the sites; and
    c. Measures to dissipate energy and prevent erosion;
(3) Revegetation of disturbed areas using native plants and locally-sourced plants and seeds; and
(4) A monitoring, maintenance, and reporting schedule.

A minimum of three weeks prior to the start of ground-disturbing construction activities, unless an alternate timeframe is approved by the Deputy Director, the Licensee shall submit a California Erosion and Sediment Control Plan to the Deputy Director for review and approval. The Deputy Director may require

modifications as part of any approval. The California Erosion and Sediment Control Plan shall be developed in consultation with the State Water Board, North Coast Regional Board, and appropriate Tribes and identify any additional erosion and sediment control best management practices (BMPs) beyond those required by Condition 10 (e.g., Construction General Permit) that the Licensee will use to minimize pollution from sediment erosion caused from Project implementation. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the California Erosion and Sediment Control Plan upon receipt of Deputy Director and any other required approvals. Any changes to the California Erosion and Sediment Control Plan shall be approved by the Deputy Director prior to implementation. Potential ~~best management practices (~~BMPs~~)~~ include those identified in the Licensee's **November 2020 Definite Decommissioning Plan**~~2018 Definite Plan, the Licensee's September 30, 2017, Technical Support Document~~, *Water Quality Management for Forest System Lands in California –Best Management Practices* (USFS 2012), California Department of Transportation's May 2017 *Construction Site Best Management Practices (BMP) Manual* (Caltrans BMP Manual) (Caltrans 2017), or other appropriate documents.

CONDITION 11. WASTE DISPOSAL

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Waste Disposal Plan to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Waste Disposal Plan shall describe how the Licensee will manage and dispose of all non-hazardous wastes**36**~~33~~ generated as part of the Project in a manner protective of water quality. The Waste Disposal Plan shall be developed in consultation with staff from the North Coast Regional Board and State Water Board. ~~The Licensee shall solicit comments from the agencies listed. Additionally, the Waste Disposal Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the Waste Disposal Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Waste Disposal Plan shall be approved by the Deputy Director prior to implementation.~~

At a minimum, the Waste Disposal Plan shall include:

(1) The elements of the waste disposal description presented in **the November 2020 Definite Decommissioning Plan filed with FERC**~~Section 5 of the Licensee's 2018 Definite Plan~~, that influence water quality, and as updated based on the requirements presented in this condition. ~~If the Licensee proposes to change any elements material to water quality, the Waste Disposal Plan~~

36~~33~~ Management of hazardous materials is covered in Hazardous Materials Management (Condition 12).

~~submittal shall highlight such changes and provide a rationale, including any new information relied on~~;

(2) An estimate of the quantity and nature of anticipated waste generated by dam removal and other Project decommissioning activities and a description of where all materials and debris will be disposed;
(3) A detailed description of on-site disposal, including the proposed locations and associated size of sites;
(4) Erosion control measures for on-site disposal activities; and
(5) A proposal to restore on-site disposal sites **in accordance with the Construction General Permit and stormwater pollution and prevention plans (consistent with Condition 10 of this certification)**~~with topsoil and native vegetation~~, including monitoring, reporting, and follow up actions (if needed) to ensure the long-term stability of the restored disposal site and protection of water quality.

On-site disposal of inert, non-hazardous debris resulting from dam removal and other Project decommissioning activities may be buried ~~in accordance with requirements in division 2, title 27 of the California Code of Regulations~~**at disposal sites identified in the Waste Disposal Plan**. With exception of the J.C. Boyle scour hole and powerhouse tailrace disposal sites identified in the **November 2020 Definite Decommissioning Plan** ~~2018 Definite Plan~~, the Licensee shall ensure that the disposal sites are above the ordinary high-water mark (OHWM) and in a location that does not drain directly to surface waters. The Licensee shall select disposal site locations where drainage patterns can be preserved. If a waste disposal site has the potential to drain into surface waters, catch basins shall be constructed whenever feasible[37]~~34~~ and other appropriate BMPs from the Caltrans BMP Manual shall be implemented, to intercept runoff before it reaches surface waters.

On-site disposal areas that will remain uncovered through the rainy season (between October 16 and May 14) shall be protected with appropriate BMPs from the Caltrans BMP Manual to prevent erosion **or as otherwise allowed under Condition 10 of this certification**. Reinforced steel and other recyclable materials should be recycled**, when feasible,** at local recycling facilities. Excavated embankment material may be used as topsoil to cover on-site disposal areas prior to grading and being sloped for drainage. Concrete rubble resulting from demolition of the powerhouses may be buried in the existing tailrace channel. All mechanical and electrical equipment shall be hauled to a suitable commercial landfill or salvage collection point. Prior to Project completion, all on-site disposal locations shall be graded and ~~vegetated~~ **stabilized** to reduce the potential for erosion.

[37]~~34~~ The Licensee shall provide justification for any determination that a catch basin is infeasible at a disposal site with the potential to drain into surface water. Additionally, the Licensee shall provide support for why other appropriate BMPs from the Caltrans Manual are sufficient to protect water quality and beneficial uses.

The California Waste Disposal Plan, dated December 2021, submitted by the KRRC to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfies the plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Waste Disposal Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Waste Disposal Plan upon receiving all required approvals.

CONDITION 12. HAZARDOUS MATERIALS MANAGEMENT

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Hazardous Materials Management Plan to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Hazardous Materials Management Plan shall be developed in coordination with State Water Board staff. The Hazardous Materials Management Plan shall include the following: (a) proper disposal or abatement of hazardous materials and wastes that are encountered as part of decommissioning activities (e.g., asbestos tiles or building materials, batteries, etc.); (b) proper storage, containment, and response to spills of hazardous materials and wastes that are part of Project implementation (e.g., gasoline and diesel for vehicles, oil and other fluids for construction equipment, etc.); and (c) proper removal and disposal of septic tanks. At a minimum, the Hazardous Materials Management Plan shall include the requirements presented in this condition and:

(1) The elements of the hazardous materials management description presented in **the November 2020 Definite Decommissioning Plan**~~Appendix O3 of the Licensee's 2018 Definite Plan~~, that influence water quality, as updated based on the requirements presented in this condition. ~~If the Licensee proposes to change any elements material to water quality, the Hazardous Material Management Plan submittal shall highlight such changes and provide a rationale, including any new information relied on~~;
(2) A list with contact information of federal, state, and local officials the Licensee will contact to respond in the event of a hazardous materials spill. The list and contact information shall be maintained and updated by the Licensee. In the event of a hazardous materials spill, at a minimum, the Licensee shall immediately inform the California Emergency Management Agency, CDFW, North Coast Regional Board, and the State Water Board staff of the magnitude, nature, time, date, location, and action taken for the spill;
(3) An inventory of hazardous materials and wastes at each facility and the plan for final disposition of the hazardous materials and wastes;
(4) Description of hazardous materials storage, spill prevention, and cleanup measures, including the deployment and maintenance of spill cleanup materials and equipment at each facility/site to contain any spill from Project activities. 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~~; and

(5) Testing, monitoring, and reporting that will be implemented if a spill occurs to ensure water quality is not affected.

~~The Deputy Director may require modification as part of any approval. The Licensee shall file the Deputy Director's approval, together with any required modifications, with FERC. The Licensee shall implement the Hazardous Materials Management Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Hazardous Materials Management Plan shall be approved by the Deputy Director prior to implementation.~~

For structures being removed, the Licensee shall inspect each structure prior to removal for hazardous materials (e.g. asbestos-containing material, lead-based paint, and polychlorinated biphenyls [PCBs]) and perform any necessary sampling or testing when inspection alone does not provide sufficient information to determine whether the material is hazardous. Any material with asbestos, lead, PCBs, or other hazardous waste shall be handled and disposed of as hazardous waste at approved hazardous waste facilities in accordance with applicable waste management regulations. Other deconstruction materials shall be disposed of as non-hazardous waste in accordance with Waste Disposal (Condition 11) provisions of this certification.

All hazardous materials removed from inside existing structures during Project implementation (e.g., paints, oils, and welding gases) shall be either returned to the vendor, recycled, or managed and disposed of as hazardous waste at an approved hazardous waste facility in accordance with applicable federal and state regulations. Transformer oils shall be tested for PCBs if no data exist. Any tanks that contained hazardous materials shall be decontaminated prior to disposal. Universal hazardous waste (e.g., lighting ballasts, mercury switches, and batteries) shall be handled in accordance with applicable federal and state universal waste regulations.

Existing septic tanks associated with Project facilities shall be decommissioned in place or removed and disposed of in accordance with the corrective action requirements specified in the State Water Board's *Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy)[38~~35~~] (State Water Board 2012).

The California Hazardous Materials Management Plan, dated December 2021, submitted by the KRRC to the State Water Board on July 7, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfies the plan requirements

[38~~35~~] The OWTS Policy was adopted by the State Water Board on June 19, 2012 per Resolution No. 2012-0032; it was approved by the Office of Administrative Law on November 13, 2012; and consistent with OWTS Policy section 13.0, became effective on May 13, 2013. On April 17, 2018, per Resolution No. 2018-0019, the State Water Board amended the OWTS Policy renewed its conditional waiver.

of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. Any changes to the Hazardous Materials Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Hazardous Materials Management Plan upon receiving all required approvals.

CONDITION 13. HATCHERIES

No later than six months following issuance of a FERC license surrender order, the Licensee shall submit a Hatcheries Management and Operations Plan (Hatcheries Plan) to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Hatcheries Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, and NMFS. ~~The Licensee shall solicit comments from the agencies listed above. Additionally, the Hatcheries Plan shall include the comments received during the consultation process and identify how the Licensee addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Hatcheries Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Hatcheries Plan upon receipt of Deputy Director and any other required approvals. Following Deputy Director approval of the Hatcheries Plan, any changes to the Hatcheries Plan with the potential to increase impacts to water quality shall be approved by the Deputy Director prior to implementation.~~ At a minimum, the Hatcheries Plan shall include:

~~(1) The Licensee's plans to construct, modify, operate, maintain, and facilitate transfer of ownership and continued operation of the Fall Creek and Iron Gate hatcheries, as presented in Section 7.8 of the 2018 Definite Plan, and as updated based on the requirements in this certification. If the Licensee proposes to change any elements material to water quality, the Hatcheries Plan shall highlight such changes and provide a rationale, including any new information relied on;~~

(1) ~~(2)~~ Annual fish production goals that include the target production numbers by species **and**~~,~~ life stage~~, and hatcheries locations~~;

(2) ~~(3)~~ Identification of water supplies that will be used to operate ~~the Iron Gate and~~ Fall Creek ~~h~~**H**atcher**y**~~ies~~ including: location; anticipated diversion rates (cfs) and total diversion amounts (annual and monthly); minimum amount of flow that will be bypassed below the diversions to provide volitional fish passage; and summaries of and compliance with any water right requirements associated with water diversions;

(3) ~~(4)~~ Implementation actions for protection of hatchery and natural fish populations (as impacted by hatchery operations) in the event water supply to ~~Iron Gate or~~ Fall Creek ~~h~~**H**atcher**y**~~ies~~ is unavailable due to drought or other limitations;

(4) ~~(5)~~ The proposed construction BMPs for ground-disturbing activities associated with construction of the hatcher**y**~~ies~~, including establishment of a 20-foot buffer around delineated wetlands, unless site-specific conditions require adjustment of

the buffer in a manner that remains protective of delini~~e~~ated wetlands and is acceptable to a qualified and approved biologist. Construction associated with these activities shall be subject to the BMPs required under the Construction General Permit;

~~(6) Details regarding a minimum flow in Bogus Creek of 4.5 cfs, unless it is determined that an alternative minimum flow is required to provide volitional fish migration for Chinook salmon, coho salmon, and steelhead. If the hatchery diversions cause a flow within Bogus Creek downstream of the bypass that is less than 4.5 cfs (or the minimum flow identified for each species during their migration period), hatchery operations shall be adjusted, in coordination with NMFS and CDFW, to reduce the percentage of flow diverted from Bogus Creek and protect of anadromous fish passage~~;

(5) ~~(7)~~ Expected duration of ~~each~~ **the** hatchery's operation~~s~~; and

(6) ~~(8)~~ Reporting details, such as the amount of water diverted ~~at each hatchery~~, bypass flows, and reporting requirements under the NPDES permit.

Prior to operation of the Fall Creek ~~and Iron Gate~~ **H**~~h~~atcher**y**~~ies~~, the Licensee shall ensure that ~~each hatchery~~**it** has obtained coverage under and complies with a NPDES permit issued by the North Coast Regional Board. If the closure of ~~the hatcheries~~**Fall Creek Hatchery** is anticipated while the license surrender order is still in effect, the Hatchery Plan shall be updated to include the proposal for decommissioning of the facilities.

The Hatcheries Management and Operations Plan dated July 2020 and submitted by the KRRC to the State Water Board on July 14, 2022, as amended by the KRRC's October 10, 2022, supplemental filing satisfies the plan requirements of this condition with the modification outlined below. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment.

- **The Licensee shall ensure that the appropriate water right reports under California Code of Regulation, title 23, section 929, or the appropriate statements of diversion and use for diversion under riparian or pre-1914 water rights under Water Code section 5101 are filed with the State Water Board for water diversions used for hatchery operations.**

Any changes to the Hatcheries Plan with the potential to increase impacts to water quality shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the Hatcheries Plan upon receipt of all required approvals.

CONDITION 14. RESTORATION

No later than six months following issuance of the FERC license surrender order, and prior to initiation of drawdown activities, the Licensee shall submit a **Reservoir Area Management Plan (**Restoration Plan**)** to the **Executive Director of the State Water**

Board or the Deputy Director for review and approval. The Restoration Plan shall be developed in consultation with staff from the North Coast Regional Board, State Water Board, and CDFW. ~~The Licensee shall solicit comments from the agencies listed above. Additionally, the Restoration Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Restoration Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Restoration Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Restoration Plan shall be approved by the Deputy Director prior to implementation.~~ At a minimum, the Restoration Plan shall include:

~~(1) The material elements of the Licensee's restoration plan for the Project, as presented in Section 6 of the Licensee's 2018 Definite Plan, and as updated based on the requirements in this condition. If the Licensee proposes to change any elements material to water quality, the Restoration Plan submittal shall highlight such changes and provide the rationale, including any new information relied on;~~

(1) ~~(2)~~ Detailed description of proposed restoration activities (e.g., grading, planting, swales, wetland construction, etc.)~~ and~~**. The description of proposed restoration activities shall include associated water quality protection measures the Licensee will implement as part of restoration;**

(2) ~~p~~**P**reliminary map**s of proposed restoration activities that** identify~~ing~~ proposed locations for restoration activities. The preliminary map shall be updated within ~~two~~ **six** months following drawdown, as necessary. **The preliminary maps shall: identify areas of grading, water runoff control measures, planting, seeding, mulching, and irrigation areas. Preliminary maps should include final limits of work zones, delineated wetlands within areas of proposed disturbance, the reservoir footprints, the J.C. Boyle Power Canal and scour hole, and all areas of temporary disturbance where revegetation activities would occur**~~The description of proposed restoration activities shall include associated water quality protection measures the Licensee will implement as part of restoration~~;

(3) Exclusive use of native plants, with preference for plants that promote soil stabilization;

(4) Description and results of the Licensee's evaluation of the presence of wetlands that could be affected by the Project, including wetlands in the potential disposal areas;

(5) Description of measures the Licensee will implement to ensure no net loss of wetland **and**~~or~~ riparian habitat. Measures shall include establishment of a minimum 20-foot buffer around all **non-reservoir dependent,** delineated wetlands potentially affected by construction impacts (unless site-specific conditions require adjustment of the buffer in a manner that remains protective of **non-reservoir dependent,** delineated wetlands and is acceptable to a qualified and approved biologist) to deter heavy machinery from traversing the wetland and prevent runoff pollution associated with Project activities from directly

entering **the non-reservoir dependent** wetlands**. (For reference, non-reservoir dependent wetlands refers to wetlands that are not anticipated to be impacted by drawdown and their primary hydrological sources are the Klamath River, a stream or seep, and/or precipitation.)**;

(6) Description of how the Licensee will ensure floodplain connectively within the reservoir footprint;

(7) Description of how the Licensee will monitor for and address any invasive weeds in the restored area;

(8) Plan for installation of large woody material in the Hydroelectric Reach in California that includes:

a. Number or volume of large woody material to be installed;

b. Placement of a portion of large woody material at or above the OHWM to create habitat at higher flows,

b. c.Consistency with practices in *California Salmonid Stream Habitat Restoration Manual* (CDFG 2010) or guidance provided through consultation with staff from CDFW, NMFS, North Coast Regional Board, and State Water Board; and

c. d.Timeline for placement of large woody material, which shall not occur until active dam and facilities removal work is complete; and

(9) Monitoring and reporting on the implementation of the Restoration Plan, including adaptive management measures that will be implemented over time to ensure successful restoration (e.g., measures to address the loss of newly planted vegetation, soil instability[39][36], etc.). Monitoring shall occur frequently enough to determine whether plantings are successful and to facilitate implementation of adaptive measures (e.g., supplemental irrigation, re-seeding, changes in plant types) to ensure rapid establishment of vegetation.**; and**

(10) Confirmation that water pumps used for irrigation are screened to prevent fish injury or entrainment.

Within six months of concluding drawdown activities, and annually thereafter until otherwise directed by the Deputy Director, the Licensee shall provide a report to the Deputy Director documenting implementation of the Restoration Plan, including highlights of any problems encountered and adaptive management measures deployed or proposed to address the problems. The Licensee shall provide additional reports or information related to implementation of the Restoration Plan if requested by the Deputy Director.

The Reservoir Area Management Plan, dated August 2022, as submitted by the KRRC to the State Water Board on August 11, 2022, as amended by the KRRC's October 10, 2022 supplemental filing, satisfy the plan requirements of this condition and are hereby approved with the modification noted below. The KRRC

[39][36] Adaptive management measures for soil stabilization may refer to the Slope Stability Monitoring Plan required in Slope Stability (Condition 18).

shall file the approved documents with FERC within 30 days of this certification amendment.

- **A minimum of six months prior to reservoir drawdown, the Licensee shall submit a Cold-Water Report to the Deputy Director for review and approval that includes: (1) identification of potential cool-water areas in the Klamath River from the upper end of J.C. Boyle Reservoir to Cottonwood Creek; and (2) methods for monitoring and analysis of the cold-water area, triggers that would guide implementation of adaptive management measures if necessary, and a schedule for monitoring, analysis, and reporting of cold-water areas. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Cold-Water Report, together with any required modifications, with FERC. Any changes to Cold-Water Report shall be approved by the Deputy Director prior to implementation. Upon receiving all necessary approvals, the Licensee shall implement the Cold-Water Report for the duration of the license surrender order or until otherwise approved by the Deputy Director.**

Any changes to the Restoration Plan, including changes to the final reservoir restoration designs, shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Restoration Plan upon receipt of all required approvals.

CONDITION 15. WATER SUPPLY MONITORING AND MANAGEMENT

The Licensee shall implement the following measures to protect water supply and beneficial uses. The Licensee shall annually prepare, and submit to the Deputy Director, a Water Supply Management Report that includes the elements described below. The Deputy Director may require implementation of additional adaptive management measures informed by the report and associated monitoring results.

Surface Water Diversions: The Licensee shall identify all points of diversion on the Klamath River listed in the Electronic Water Rights Information Management System (eWRIMS). The Licensee shall contact all California water rights holders with points of diversion on the Klamath River to determine whether the water right holder is interested in working with the Licensee to evaluate potential Project impacts to the water right holder. If potential impacts are identified and if the water right holder is interested in working with the Licensee, the Licensee shall provide temporary accommodations (e.g., replacement water, settling basins, etc.) to address potential impacts. Following dam removal, the Licensee shall investigate any impacts reported by a diverter. If the investigation confirms an adverse impact has occurred as a result of dam removal, the Licensee shall implement measures to reduce impacts and allow the water right holder to divert water in the same manner (e.g., amounts, suitable quality, and timing) as before dam removal.

The year prior to and annually for the first two years following drawdown, the Licensee shall submit a Water Supply Management Report to the Deputy Director on implementation of the surface water supply activities described above. At a minimum, the report shall include: a map showing the location of potentially affected points of diversion; a description of the potential adverse effects; a description of proposed/implemented mitigation measures; and the number of water right holders who agreed to work with the Licensee to address potential water supply issues.

Groundwater: To determine Project effects on surrounding groundwater wells, the Licensee shall, within a ~~2.5-mile~~**1,000-foot** range of the reservoirs' OHWM, monitor groundwater levels before, during, and after drawing down the reservoirs. To identify groundwater wells, the Licensee shall outreach to all residents and landowners within ~~2.5 miles~~**1,000 feet** of the California Project reservoirs to inquire about their groundwater wells. **The outreach effort shall include information regarding the Local Impact Mitigation Fund, including information on any prerequisites to access the fund (e.g., if funding is dependent on participation in the groundwater monitoring effort).** At least two months prior to commencing drawdown activities, the Licensee shall monitor groundwater levels at **all available locations or up to** ~~a minimum of~~ 10 locations**, whichever is less,** within ~~2.5 miles~~**1,000 feet** of the California reservoirs dispersed throughout the Hydroelectric Reach in California. The Licensee may begin groundwater elevation monitoring earlier, in order to integrate observations of natural seasonal fluctuations in groundwater elevation into the impact analysis.

The Licensee shall continue to monitor groundwater levels, at least monthly, until otherwise approved by the Deputy Director and for a term of at least two years following completion of drawdown of ~~all Project reservoirs~~**Copco No. 1 and Iron Gate Reservoirs**. Monitoring may occur at groundwater wells of landowners or residents with wells located within ~~2.5 miles~~**1,000 feet** of the California Project reservoirs who volunteer to allow testing or at other groundwater monitoring wells around the California Project reservoirs. Potential groundwater monitoring locations and measures to address potential water supply impacts are identified in **the California Water Supply Management Plan, dated July 2022**~~Appendix N of the Licensee's 2018 Definite Plan~~. The Licensee shall provide the Deputy Director with the locations of groundwater wells that will be monitored per this condition, and the Deputy Director may require additional monitoring **on lands under the control of the Licensee** if the locations chosen do not provide sufficient information on potential impacts to groundwater levels. The Licensee shall submit an annual Groundwater Report to the Deputy Director, for a minimum of two years directly following completion of drawdown. Monitoring duration may be adjusted based on groundwater levels reported in the annual Groundwater Report, and as approved by the Deputy Director. At a minimum, the annual Water Supply Management Report shall include a section on groundwater that:

- Documents groundwater level monitoring results;
- Highlights any trends or significant changes in groundwater levels; and
- Summarizes actions the Licensee has or will implement to address any impacts to groundwater supply associated with Project implementation. Actions

implemented by the Licensee shall ensure disruptions in groundwater supply determined to be a result of the Project are limited. Actions shall include, but are not limited to, providing temporary water until Project impacts are adequately addressed.

The California Water Supply Management Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfy the requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the California Water Supply Management Plan upon receipt of all required approvals. Any changes to the California Water Supply Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the California Water Supply Management Plan upon receipt of all required approvals.

Fire Protection: **The Licensee shall submit a Fire Management Plan to the Executive Director of the State Water Board or Deputy Director for review and approval prior to its implementation.** The ~~first annual Water Supply Management Report~~ **Fire Management Plan** shall include a list and map of locations where fire trucks and/or helicopters may access the Klamath River and its tributaries for residential fire protection efforts in the Hydroelectric Reach.

The Fire Management Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the Fire Management Plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Fire Management Plan upon receipt of all required approvals. Any changes to the Fire Management Plan related to water supply access or that have the potential to affect water quality, including beneficial uses shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Fire Management Plan upon receipt of all required approvals.

If the Deputy Director finds that the measures undertaken to address water supply impacts are insufficient or additional reporting is needed, the Deputy Director may require the Licensee to implement additional measures or continue reporting on implementation of this condition.

CONDITION 16. AMPHIBIAN AND REPTILE MANAGEMENT

No later than three months following issuance of a FERC license surrender order, the Licensee shall submit an Amphibian and Reptile Rescue and Relocation Plan (Amphibian and Reptile Plan) to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Amphibian and Reptile Plan shall be developed in consultation with staff from CDFW, USFWS, and State Water Board. ~~The Licensee shall solicit comments from the agencies listed above. Additionally, the Amphibian and Reptile Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Amphibian and Reptile Plan, together with any required modifications, with FERC. The Licensee shall implement the Amphibian and Reptile Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Amphibian and Reptile Plan shall be approved by the Deputy Director prior to implementation.~~

The Amphibian and Reptile Plan shall address protection of amphibians and reptiles previously found in the areas of the Project affected by drawdown and land-disturbing activities that are listed under the Federal Endangered Species Act (ESA) or the California ESA, or are designated as Species of Special Concern by CDFW. These species may include, but are not limited to foothill yellow-legged frog, and western pond turtle. At a minimum the Amphibian and Reptile Plan shall include:

(1) The amphibians and reptiles covered by the plan;
(2) Surveys and protocols that will be implemented to identify and relocate amphibians and reptiles identified in the plan;
(3) Protocols for relocation that will be implemented upon the incidental discovery of a listed species during surveys;
(4) Identification of the minimum qualifications for the individual(s) that will conduct the surveys and relocations, if necessary;
(5) Timing and locations where surveys will be conducted, including all areas of the Project affected by drawdown and land-disturbing activities in California with known amphibian or reptile habitat or presence;
(6) Identification of potential relocation areas, which may include lower reaches of Klamath River tributaries with suitable habitat approved by USFWS and CDFW;
(7) Pre-construction surveys and associated reporting for western pond turtles conducted by an on-site biologist approved by applicable agencies and familiar with western pond turtle ecology;
(8) Provisions for rescue and relocation of western pond turtles after reservoir drawdown that includes survey timing to cover multiple life stages, survey frequency, survey locations, relocation areas with suitable habitat, survey methodology, and reporting of survey results within 60 days of the completion of surveys to applicable agencies and the State Water Board; and
(9) Monitoring and reporting that will be implemented to document compliance with this condition, including notification and reporting identified by USFWS and CDFW through consultation to develop the plan. Reporting shall include a report

submitted to applicable agencies within 30 days of completing the Project, regarding all species handled and relocated; location, date, time and duration of the handling; enumeration and identification of species handled; identification of species life stage; identification of capture personnel; the release location and time; stream, transport, and receiving water temperatures; and location, date, and time of release.

The Amphibian and Reptile Plan must be approved by the Deputy Director prior to drawdown, in-water work, and work in riparian areas. Prior to approval of the Amphibian and Reptile Plan, the Licensee may implement ground-disturbing activities occurring entirely above the OHWM, so long as a USFWS- and CDFW-approved biological monitor surveys the area, monitors construction, and takes appropriate actions to protect amphibians and reptiles.

The California Terrestrial and Wildlife Management Plan, dated August 2022, as submitted by the KRRC to the State Water Board on July 28, 2022, for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the California Terrestrial and Wildlife Management Plan upon receipt of all required approvals. Any changes to the California Terrestrial and Wildlife Management Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the California Terrestrial and Wildlife Management Plan upon receipt of all required approvals.

CONDITION 17. BALD AND GOLDEN EAGLE MANAGEMENT

~~No later than three months following issuance of a FERC license surrender order, and prior to Project implementation, the Licensee shall submit a Bald and Golden Eagle Management Plan (Eagle Management Plan), to the Deputy Director for review and approval. The Eagle Management Plan shall be developed in consultation with staff from CDFW, USFWS, and State Water Board. The Licensee shall solicit comments from those agencies. Additionally, the Eagle Management Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Eagle Management Plan, together with any required modifications, with FERC. The Licensee shall implement the Eagle Management Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Eagle Management Plan shall be approved by the Deputy Director prior to implementation.~~

~~The Eagle Management Plan shall include, at a minimum, the following:~~

~~A two-year survey for eagle use patterns shall be conducted prior to construction activities.~~

~~The first-year survey shall determine bird use patterns at any facilities to be removed or modified during the time of year most likely to detect bird usage (completed by the Licensee in 2017).~~

~~The second-year survey shall include focused surveys (see below).~~

~~Surveys shall be conducted by a qualified avian biologist, approved by CDFW and USFWS.~~

~~A focused survey (two site visits) shall be conducted in a single nesting season within two years prior to drawdown to document the presence of nests. These focused surveys shall identify eagle nests within one mile of disturbance areas within the Limits of Work, including but not limited to demolition areas where there may be any loud noise disturbance (e.g., helicopter or plane, blasting, etc.). The early nesting season survey shall occur at a time when eagles are most likely to be found at the nest sites, and the second survey shall occur later in the season and prior to the fledglings leaving the nest to confirm nesting activity. All observations shall be reported to CDFW using the California Bald Eagle Nesting Territory Survey Form (CDFW 2017d).~~

~~Within two weeks prior to commencing construction or ground-disturbing activities, the Licensee shall conduct at least one pre-construction survey within the survey area defined above.~~

~~Wherever possible, clearing, cutting, and grubbing activities shall be conducted outside of the eagle nesting season (January 1 through August 31[37]).~~

~~If active eagle nests are documented during the surveys, a one-mile[38] restriction buffer shall be established around the nest to ensure that nests are not disturbed. This buffer may be reduced in coordination with USFWS and CDFW, while taking into consideration components such as proposed activity, distance to activity, terrain, and line of site. For example, in coordination with agencies, if a nest is not within line-of-site, meaning that trees or topographic features physically block the eagle's view of construction activities, the buffer could be reduced to 0.25-mile. Further reduction of buffers or allowance of limited activity inside of buffers could occur in coordination with an on-site biologist, CDFW, and the USFWS, while being consistent with the Licensee's proposed Eagle Avoidance and Minimization Plan, if it is determined that the activities shall not jeopardize nesting success. To reduce the potential for nesting in a previously identified active nest, measures may be implemented prior to the nesting season such as removing the nest or making the nest temporarily unavailable (e.g., placing cone or ball in nest) in coordination with an on-site biologist, CDFW, and the USFWS.~~

~~[37] Eagle breeding season of January 1 through August 31, as identified by A. Henderson, CDFW, Environmental Scientist, pers. comm, November 2017.~~
~~[38] Eagle nest restriction buffer of 1.0 mile, as identified by A. Henderson, CDFW, Environmental Scientist, pers. comm, November 2017.~~

~~Nests within a one-mile buffer shall be monitored by an USFWS- and CDFW-approved biologist when there is a potential for noise disturbance, in order to assess whether eagle activity patterns are normal, as compared with that observed during baseline surveys described above.~~

~~If activities are anticipated to result in take under the Bald and Golden Eagle Protection Act, it would be considered a significant impact and the Licensee shall coordinate appropriate measures, including procurement of any necessary take permits, with USFWS and CDFW. The Licensee shall report on the status of bald and golden eagle surveys within one month of survey completion to USFWS, CDFW, and State Water Board.~~

~~Monitoring and reporting that will be implemented to document compliance with this condition, including notification and reporting identified by USFWS and CDFW through consultation to develop the Eagle Management Plan.~~

The Bald and Golden Eagle Conservation Plan developed in consultation with USFWS staff that is dated January 2022, and submitted by the KRRC to the State Water Board on July 7, 2022, demonstrates that the potential effects to bald and golden eagles from Project implementation have been considered and addressed by the Licensee through avoidance, minimization, and mitigation measures. The Bald and Golden Eagle Conservation Plan supports the KRRC's request for an incidental take permit for bald and golden eagles.

The Licensee shall comply with the USFWS' incidental take permit, dated October 14, and effective October 17, 2022, issued under the Bald and Golden Eagle Protection Act, for any incidental take of bald eagles or golden eagles, and any amendments thereto. Any updates to the incidental take permit shall be approved by USFWS and submitted to the Deputy Director prior to implementation.

CONDITION 18. SLOPE STABILITY

The Licensee shall identify reservoir slopes and other Project areas prone to instability and implement site-specific measures to avoid potential slope erosion and associated increases in sedimentation to surface waters throughout Project implementation. Additionally, the Licensee shall monitor for and address slope instability throughout the term of the Project, including restoration activities. No later than three months following issuance of the FERC license surrender order and prior to starting drawdown, the Licensee shall submit a Slope Stability Monitoring Plan to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Slope Stability Monitoring Plan shall be developed in consultation with State Water Board staff. ~~The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Slope Stability Monitoring Plan, together with any required modifications, with FERC. The Licensee shall implement the Slope Stability Monitoring Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Slope Stability Monitoring Plan shall be approved by the~~

~~Deputy Director prior to implementation.~~ At a minimum, the Slope Stability Monitoring Plan shall include:

(1) The material elements of the Licensee's proposal related to stability of embankments and reservoir rims, as presented in the **November 2020 Definite Decommissioning Plan**~~2018 Definite Plan~~ and the Licensee's commitment to implement final EIR Mitigation Measure GEO-1 (Slope Stabilization), and as updated based on the requirements presented in this condition~~. If the Licensee proposes to change any elements material to water quality, the Slope Stability Monitoring Plan shall highlight such changes and provide the rationale, including any new information relied on~~;
(2) A list of slopes and Project areas prone to instability;
(3) Number and location of piezometer wells the Licensee will use to monitor water levels and pore pressure **and/or alternative methods to monitor for slope stability**;
(4) Number and location of inclinometer installations **and/or alternative methods** to monitor **and determine** slope stability;
(5) A list of measures the Licensee will implement to prevent erosion and maintain soil stability;
(6) A description of soil stability monitoring, including locations and schedule;
(7) Visual monitoring for potential slumping, cracking, and other signs of slope instability throughout the Project area;
(8) Potential measures the Licensee will implement to address soil instability;
(9) Coordination with Reservoir Drawdown (Condition 3) to address the potential modification of drawdown rates to control slope instability if necessary to protect infrastructure, property, or resources;
(10) Slope inspections during drawdown of the reservoirs and after storm events, and implementation of any necessary repairs, replacements, and/or additional measures to minimize potential slope instability effects on water quality based on inspection information; and
(11) Submittal of the following reports to the Deputy Director until ~~otherwise approved~~**the Licensee requests and the Deputy Director approves discontinuance of reporting**:
    a. An annual report that summarizes: slope stability monitoring and inspection information; any repairs, replacements, or additional stabilization measures implemented; and any proposed changes to the Slope Stability Monitoring Plan; and
    b. Monthly reports during the rainy season (October 16 – May 14) that identify any areas that have experienced slope instability, any actions taken to control and improve slope stability, and an assessment of the success of initial and any ongoing slope stability actions implemented.

Upon request, the Licensee shall provide additional information regarding slope stability measures undertaken to address identified slope instability. If monitoring and inspection indicate that the measures identified in the Slope Stability Monitoring Plan are insufficient to protect water quality, the Deputy Director may establish a timeframe

and require the Licensee to re-consult on the Slope Stability Monitoring Plan, make changes, and resubmit the Slope Stability Monitoring Plan for Deputy Director approval.

The California Slope Stability Monitoring Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 14, 2022, for review and approval, as amended by the October 10, 2022 supplemental filing, satisfies the plan requirements of this condition and are hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Slope Stability Monitoring Plan upon receipt of all required approvals. Any changes to the Slope Stability Monitoring Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Slope Stability Monitoring Plan upon receipt of all required approvals.

CONDITION 19. RECREATION FACILITIES

No later than six months following issuance of the FERC license surrender order, the Licensee shall submit a Recreation Facilities Plan to the **Executive Director of the State Water Board or the** Deputy Director for review and approval. The Recreation Facilities Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, and CDFW. ~~The Licensee shall include comments received from the agencies consulted during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Recreation Facilities Plan, together with any required modifications, with FERC. The Licensee shall implement the Recreation Facilities Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Recreation Facilities Plan shall be approved by the Deputy Director prior to implementation.~~ At a minimum, the Recreation Facilities Plan shall include:

(1) The material elements of the Licensee's recreation proposal for the Project, as presented in ~~Section 7.6 of the 2018 Definite~~**the 2020 Definite Decommissioning** Plan, and as updated based on the requirements presented in this condition~~. If the Licensee proposes to change any elements material to water quality, the Recreation Facilities Plan submittal shall highlight such changes and provide a rationale, including any new information relied on~~;
(2) A list of recreation facilities associated with the Project;
(3) Identification of recreation facilities that will be removed and a schedule for removal;
(4) Identification of any recreation sites to be added, modified, or maintained following dam removal, including location, the types of facilities to be added, modified, or maintained, and the proposed schedule for completion of new facilities or modifications to existing facilities;
(5) The Licensee's plans to facilitate transfer of ownership and/or operation of Project recreation facilities;

(6) Proposed measures to protect water quality and beneficial uses during any construction, removal, maintenance, or other activities associated with the Project recreation facilities;
(7) Water quality monitoring of Project recreation areas in compliance with this condition;
(8) Public education signage regarding aquatic invasive species and proper boat cleaning at established public boat access locations or visitor information kiosks in the vicinity;
(9) Installation, if necessary, and maintenance of boat cleaning stations at Project boat ramps for the removal of aquatic invasive species;
(10) Signage posted at **operational** Project recreation facilities for water quality impairments (e.g., *E. coli* or fecal coliform and microcystin toxin) discovered through sampling under this condition or other efforts. If water quality monitoring indicates the impairments are an ongoing problem, the Licensee shall propose implementation of appropriate measures as part of the annual reporting requirement outlined in this condition; ~~and~~
(11) Annual reporting to the Deputy Director on implementation of the Recreation Facilities Plan that includes: the status of any proposed construction, removal, or modifications to Project recreation facilities; water quality monitoring results required per this condition; and any proposed modifications to the Recreation Facilities Plan requested by the Licensee; **and**
(12) Consultation with American Whitewater and Upper Klamath Outfitters Association to schedule construction activities and access restrictions during construction to minimize adverse effects on whitewater boaters.

Recreation Areas Water Quality Monitoring: The Licensee shall collect and analyze grab water samples as outlined below for protection of the recreational water contact (REC-1) beneficial use as defined in the North Coast Basin Plan. The Licensee may use the water quality results collected under the WQMP (Condition 1) and other water quality monitoring efforts[**40**~~39~~] in the Klamath River watershed that comply with Water Quality Monitoring and Adaptive Management (Condition 1) and the provisions of the Deputy Director approved WQMP, as appropriate.

For fecal coliform and *E.coli:*

Timing: Prior to drawdown, samples shall be collected during the 30-day period that spans the Independence Day holiday (June-July) and the Labor Day holiday (August-September). Following completion of drawdown, sampling shall be performed as necessary to monitor for water quality and beneficial use protection, as approved by the Deputy Director in the Recreation Facilities Plan.

[**40**~~39~~] Other water quality efforts may include Interim Measure 15 as described in Appendix D of the Klamath Hydroelectric Settlement Agreement, as amended November 30, 2016.

Frequency: Project facilities shall be monitored twice every year until each recreation facility is transferred to a new owner or as otherwise approved by the Deputy Director in the Recreation Facilities Plan.

Location: Samples shall be collected at all Project recreation facilities that provide for recreational water contact unless otherwise approved by the Deputy Director in the Recreation Facilities Plan. Samples shall be collected at locations near restrooms, recreation facilities, and other high use areas.

Method: The Licensee shall use the five samples in 30-day methodology or other future protocol identified in the North Coast Basin Plan.

For microcystin toxin:

Prior to drawdown, the Licensee shall annually monitor for microcystin toxin at all Project recreation sites that provide for recreational water contact unless otherwise approved by the Deputy Director in the Recreation Facilities Plan. At a minimum, monitoring shall continue monthly (May through October) for two years following the completion of drawdown unless the recreation site is removed. For newly constructed or modified-existing recreation sites, the Licensee shall monitor microcystin toxins for a minimum of two year beginning with completion of construction or modifications, unless otherwise approved by the Deputy Director in the Recreation Facilities Plan.

The Licensee shall report monitoring results annually. Reporting shall: summarize monitoring results; highlight any exceedances of fecal coliform, *E. coli*, or microcystin toxin and propose adaptive management measures to address exceedances. Based on monitoring results, the Deputy Director may require the Licensee to modify monitoring frequency, methods, duration, or to implement additional adaptive management measures. The Licensee shall implement changes upon receipt of Deputy Director direction and any other required approvals.

The Recreation Facilities Plan, dated July 2022, as submitted by the KRRC to the State Water Board on July 28, 2022 for review and approval, as amended by the KRRC's October 10, 2022, supplemental filing, satisfies the plan requirements of this condition and is hereby approved. The KRRC shall file the approved documents with FERC within 30 days of this certification amendment. The Licensee shall implement the Recreation Facilities Plan upon receipt of all required approvals. Any changes to the Recreation Facilities Plan shall be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of any such approval. The Licensee shall file any Deputy Director-approved updates, along with any required modifications, with FERC. The Licensee shall implement the updates to the Recreation Facilities Plan upon receipt of all required approvals.

Note that for any construction-related activities associated with tree removal in the Ward's Canyon Run, the Licensee shall develop and implement a water

quality monitoring and protection plan that meets the requirements outlined in Condition 10.

CONDITION 20. LIMITATIONS ON HYDROPOWER OPERATIONS

This water quality certification is for the proposed removal of Project facilities as described in the Licensee's application and shall not be construed as approval of more than incidental, short-term interim operation of the Project hydroelectric facilities until such removal can be implemented.

Not later than 24 months following issuance of the FERC license surrender order, if drawdown and dam removal are not initiated, the Licensee shall submit an Interim Hydropower Operations Plan (Operations Plan) to the Deputy Director for review and approval. The Operations Plan shall describe additional measures the Licensee will implement to protect water quality and fisheries in advance of drawdown and dam removal activities. The Operations Plan shall be developed in consultation with staff from the State Water Board, North Coast Regional Board, CDFW, NMFS, and USFWS. The Licensee shall solicit comments from the agencies listed above, and the Operations Plan shall include comments received during the consultation process and identify how the Licensee has addressed the comments. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy-Director-approved Operations Plan, together with any required plan modifications, with FERC. The Licensee shall implement the Operations Plan upon receipt of Deputy Director and any other required approvals.

Dam removal must be initiated no later than five years following issuance of the FERC license surrender order unless the Licensee can demonstrate to the satisfaction of the Executive Director of the State Water Board that the delay is due to factors outside of the Licensee's control.

CONDITION 21. WATER RIGHTS MODIFICATION

The Licensee shall provide the State Water Board with a description of the Licensee's proposal for the post-dam removal disposition of all water rights associated with Project facilities. Prior to changing any water diversion for implementation of the Project, the Licensee shall consult with State Water Board staff regarding potential modifications to or transfer of state-issued water right permits and licenses that may be required by the Project. The Licensee shall follow the procedures for any such modification, as described in the California Water Code and in California Code of Regulations, title 23. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 or riparian claims. The State Water Board has separate authority under the California Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversion of water.

CONDITION 22. TRIBAL WATER QUALITY STANDARDS

Project implementation and compliance with the conditions in this certification are anticipated to result in improved compliance with downstream water quality standards

for the Hoopa Valley Tribe, adopted in the *Water Quality Control Plan, Hoopa Valley Indian Reservation* (Hoopa Valley Tribe 2008)[41][40]. The **Karuk Tribe and Resighini Rancheria have received treatment-in-the-same-manner-as-a-state status, but do not yet have USEPA-approved Clean Water Act standards. The** Yurok Tribe ~~and Karuk Tribe have~~ has applied to the USEPA for treatment-**in-the-same-manner-**as-a-state status under the Clean Water Act, and it is possible that other tribes may similarly apply for and receive such status.

To ensure that the requirements of this certification ultimately meet tribal Clean Water Act standards, the 32-month report on anticipated compliance under **the** Compliance Schedule (Condition 2)**, as well as monthly water quality reports described under Condition 1,** shall be submitted to the Hoopa Valley Tribe**, Resighini Rancheria, Karuk Tribe,** and any other Native American tribes that have obtained treatment-**in-the-same-manner-**as-a-state status. Any comments from such tribes received by the Deputy Director on the report shall be a factor in the Deputy Director's consideration of whether to require implementation of additional management measures.

Additionally, the Licensee shall submit to the Hoopa Valley Tribe, **Resighini Rancheria, Karuk Tribe,** and any other tribe that has subsequently obtained treatment-**in-the-same-manner-**as-a-state status, any request to end or modify monitoring under Water Quality Monitoring and Adaptive Management (Condition 1) at the location(s) closest to or within that tribe's reservation, along with a summary of that location's monitoring results and associated data, to date. Any comments from such tribes received by the Deputy Director on the report will be a factor in the Deputy Director's consideration of whether to approve the cessation or modification of monitoring at that location(s).

CONDITION 23. CONSULTATION REQUIREMENTS

For any condition that requires consultation with specific agencies, the Licensee may consult with additional parties (including, through "good neighbor" agreements or through consultation commitments under the Klamath Hydroelectric Settlement Agreement). The Licensee is particularly encouraged to consult with local agencies with expertise in siting issues and local conditions, and with tribes that have resources that may be affected by various plans or adaptive management measures. Such consultation is likely to result in plans that are better conceived and more likely to receive approval without the need for additional modification.

ADDITIONAL CONDITIONS (CONDITIONS 24-41)

CONDITION 24. The State Water Board's approval authority includes the authority to withhold approval or to require modification of a proposal or plan prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required plan in a timely manner. If a time extension is needed to submit a

[41][40] See also a February 1, 2017, letter from Robert Franklin, Division Lead, Hoopa Tribal Fisheries – Water Division to Parker Thaler, State Water Board, Division of Water Rights.

report or plan 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 any Deputy-Director-approved time extensions with FERC. **Under existing law, all delegations for approval by the Deputy Director are permissive, and do not divest the Executive Director or State Water Board of approval authority.**

CONDITION 25. The State Water Board reserves the authority to reopen this certification based on evidence that the Project may be contributing to fish passage impediment in the Hydroelectric Reach upstream of the California/Oregon Stateline.

CONDITION 26. The State Water Board reserves the authority to add to or modify the conditions of this certification to incorporate changes in technology, sampling, or methodologies.

CONDITION 27. 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 28. 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 Klamath River watershed.

CONDITION 29. 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 30. This certification does not authorize any act which results in the unauthorized 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 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 applicable 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 applicable requirements of the cited laws for the Project authorized under this certification.

CONDITION 31. The Licensee shall submit any change to the Project, including Project operation, implementation, 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 Deputy Director for prior review and written approval. The Deputy Director shall determine significance and may require consultation with state and/or federal agencies. If the Deputy Director 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 Deputy Director.

CONDITION 32. 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.

CONDITION 33. In response to a suspected violation of any condition of this certification, the State Water Board or North Coast Regional 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 (California Water Code sections 1051, 13165,13267 and 13383).

CONDITION 34. 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 35. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local Project 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 36. 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 37. The Deputy Director and the Executive Officer shall be notified one week prior to the commencement of ground disturbing activities that may adversely affect water quality. Upon request, a construction schedule, and updates thereto, shall be provided to the State Water Board and North Coast Regional Board staff. The Licensee shall provide State Water Board and North Coast Regional Board staffs access to Project sites to document compliance with this certification.

CONDITION 38. 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 39. This certification is conditioned upon total payment of any fee required in California Code of Regulations, title 23, article 4.

CONDITION 40. This certification is subject to modification or revocation upon administrative or judicial review, including 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 41. 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.

Attachment 2: Lower Klamath Project License Surrender
Water Quality Certification Amendment – Discussion of Amendments
Federal Energy Regulatory Commission Project No. 14803

Below is supporting information and background related to the amendments made by the State Water Resources Control Board (State Water Board) to the water quality certification (certification) for the Klamath River Renewal Corporation's (KRRC's) Lower Klamath Project License Surrender (Project). More detailed information regarding the overall water quality impacts of the Proposed Project is found in the April 2020 Water Quality Certification: this attachment focuses on the reasoning for the *changes* to the certification that the State Water Board has adopted, not the reasoning for the initial adoption of the certification requirements themselves.

Please note that many amendments to the certification are for procedural streamlining, including accounting for plan approval in a certification amendment where the plan is available, and providing for appropriate review of any future amendments to the approved plans. The enumerated sections below discuss the basis of more substantive changes to certification requirements.

Condition 1 - Water Quality Monitoring and Adaptive Management

Water quality monitoring is necessary to inform corrective actions in response to Project activities. Beneficial uses of the Klamath River that may be impacted by Project activities include: municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; groundwater recharge; freshwater replenishment; navigation; hydropower generation; water contact recreation; non-water contact recreation; commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; marine habitat, migration of aquatic organisms; spawning, reproduction, and/or early development; shellfish harvesting; estuarine habitat; aquaculture; and Native American culture.

Condition 1 requires the KRRC to develop and implement a water quality monitoring plan to report on Project's impacts to water quality and implement adaptive management actions to reduce Project-related water quality impacts, particularly the discharge of sediments associated with reservoir drawdown and dam removal. Implementation of Condition 1 is required to ensure that in the long-term, beneficial uses are protected and to comply with the North Coast Regional Water Quality Control Board (North Coast Regional Board) *Water Quality Control Plan for the North Coast Region* (**North Coast Basin Plan**)[1] water quality objectives, and other appropriate requirements of state law. Monitoring requirements of Condition 1 are consistent with the State Water Board and Regional Water Quality Control Boards (collectively Water Boards) authority to investigate waters of the state, including for quality, and to require necessary monitoring and reporting pursuant to Water Code sections 13267 and 13383.

On August 26, 2022, the Federal Energy Regulatory Commission (FERC) released a *Final Environmental Impact Statement for Hydropower License Surrender and*

[1] Water Quality Control Plan for the North Coast Region. June 2018. Available at: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/basin_plan_documents/. Accessed October 27, 2022.

Decommissioning (EIS) that requires the KRRC to develop a methodology to quantify sediment export during and following reservoir drawdown and associated Project discharges using suspended sediment concentrations and flow measurements at six United States Geological Survey (USGS) gage locations. To better understand the potential water quality impacts of sediment exported during and following Project implementation, and consistent with FERC staff's recommended modifications (see EIS, Section 2.3), Condition 1 includes updates that require the KRRC to develop and implement the above referenced methodology.

The water quality monitoring plan analyzed by FERC in its EIS did not include continuous water quality monitoring from the location on the Klamath River upstream of Copco No. 1 Reservoir and downstream of Shovel Creek. In review of the final water quality monitoring plan, continuous water quality monitoring at this location is not necessary to assess initial Project water quality impacts as the Project's water quality monitoring plan maintains continuous water quality monitoring upstream of this location at USGS gage No. 1150700 and downstream of this location in the vicinity of Daggett Road Bridge, which provide sufficient information to assess water quality in this area. Additionally, the ability to add additional water quality monitoring locations through adaptive management based on reported water quality monitoring results provides the State Water Board with the ability to obtain additional water quality data, if needed. Consistent with the final water quality monitoring plan analyzed in FERC's Final EIS, Condition 1 has been revised to remove continuous water quality monitoring at the Klamath River location upstream of Copco No. 1 Reservoir and downstream of Shovel Creek.

The certification is further amended to confirm that the California Water Quality Monitoring Plan and Quality Assurance Project Plan comply with the certification requirements, as amended with the inclusion of the erosion quantification requirement discussed above. These plans were developed in consultation with the required agencies, and are adequate to provide sufficient information regarding water quality to ensure that applicable water quality standards related to Project discharges, including bio-stimulatory, temperature, sediment, and any toxic characteristics thereof, are adaptively managed and met.

Condition 2 – Compliance Schedule

Project discharges associated with reservoir drawdown, dam removal and the associated export of reservoir sediments into the Klamath River will impact water quality. Condition 2 allows for temporary exceedances in sediment-related water quality objectives in light of the long-term water quality benefits associated with the Project.

The amendment to Condition 2 removes the requirement that the KRRC evaluate the Project's effects on Klamath River tributaries as part of demonstrating attainment of water quality standards on the compliance schedule set forth in Condition 2.

Reservoir drawdown, dam removal and the associated export of reservoir sediments is expected to discharge into the mainstem of the Klamath River, rather than the

tributaries, with the exception of tributaries within the reservoir footprint. Discharges to tributaries in the reservoir footprints will be addressed through restoration actions specified in the Restoration Plan (Condition 14). Additionally, discharges to the Klamath River mainstem have the potential to affect downstream sediment distribution and have the potential to cause or contribute to a loss of connectivity with tributaries. Condition 6 requires monitoring and adaptive management to ensure select tributaries below Iron Gate Dam to Cottonwood Creek and in the Hydroelectric Reach maintain connectivity with the Klamath River to support fish passage. In light of these measures, and of the purpose of the compliance schedule being focused on mainstem discharges, it is appropriate to remove the requirement to show attainment of standards in the tributaries.

Condition 3 – Reservoir Drawdown

Dewatering the reservoirs is anticipated to contribute to increased suspended sediment concentrations and significant degradation of waters of the state; therefore, it is necessary to develop and implement a plan with appropriate actions to limit or eliminate such discharges, when feasible, in order to protect water quality and associated beneficial uses.

Condition 3 has been updated to include Project modifications consistent with the KRRC's November 2020 Definite Decommissioning Plan (KRRC, 2020). A primary change between the 2018 plans for which the certification was issued in April 2020, and the updated plans was a shift in timing of drawdown and associated dam removal. Updated drawdown modeling, conducted after the 2018 plans, identified a restriction at the Iron Gate Diversion Tunnel that limited drawdown flows and consequently extended the drawdown period. These flows are within the flows analyzed in the State Water Board's final EIR for the Project and no additional impacts are anticipated from the extended drawdown period. Additionally, the modifications allow for alternatives to cofferdams. These alternatives would accomplish the same goal of dewatering work areas and are not expected to cause additional impacts.

Condition 3 has also been amended to include FERC staff's recommended modifications to the Project as presented in the Final EIS, including coordination with the United States Bureau of Reclamation, National Marine Fisheries Service (NMFS), and United States Fish and Wildlife Service (USFWS) for any potential operational changes to the Klamath Irrigation Project to aid implementation of the Project (see EIS, Section 4.2.2).

Additionally, Condition 3 clarifies the applicability of Condition 10's requirement for development of site-specific water monitoring and protection plans for drawdown-related activities that are neither addressed by the Construction General Permit nor addressed in other conditions of the certification. Such activities include pre-drawdown and drawdown construction-related work with the potential to affect water quality, including building the access construction pads below the spillway, dredging the low-level outlet tunnel approach channel at Copco 1, cleaning and exercising the Iron Gate diversion

gate. Development and implementation of water quality monitoring and protection plans consistent with Condition 10 will ensure water quality and beneficial uses protection.

Condition 4 – Sediment Deposits

Sediment deposit remediation is necessary because discharges from the Project have the potential to deposit contaminated sediment along the banks of the Klamath River, with potential human health and safety impacts if the sediments have increased arsenic concentrations above background level. Condition 4 is modified to require sediment deposit remediation for two full calendar years following drawdown (rather than one year), consistent with the KRRC's proposal to ensure that private landowners have enough time to notify the Licensee of any deposited sediments.

Condition 5 – Anadromous Fish Presence

Project discharges associated with reservoir drawdown and flow passthrough during Project activities such as dam removal and reservoir restoration will impact water quality. Condition 5 ensures that following Project implementation anadromous fish can volitionally access the Klamath River and its tributaries within and upstream of the California portion of the Hydroelectric Reach, or that the Licensee will identify and address Project-associated barriers to passage.

Condition 5 imposes an earlier date to begin fish presence surveys, based on the KRRC's request. Additionally, the condition is updated to provide flexibility to modify or discontinue monitoring based on survey results at the Licensee's request, rather than once per year as part of the annual report. It does not change the substantive requirement that the Licensee investigate fish passage and ensure that fish passage is not hindered after removal of the hydroelectric facilities.

Condition 6 – Aquatic Resources

Condition 6 updates references regarding measures to protect aquatic resources from those in the former, 2018 Definite Plan to those in the current Aquatic Resources Management Plan. Specific modifications to Condition 6 are explained below:

Mainstem Spawning Aquatic Resource Measure

Action 1: Tributary-Mainstem Connectivity. Monitoring for tributaries in the footprint of the existing Project reservoirs is included in the Reservoir Area Management Plan (Condition 14) and therefore removed from this condition. Additionally, the condition is modified to require the Licensee provide a framework to develop adaptive management measures that the Licensee may implement to remove Project-related obstructions to tributary connectivity and fish passage rather than identify potential actions in the Tributary-Mainstem Connectivity Plan. This change allows for streamlined and targeted development of site-specific adaptive management measures should the Project's sediment discharge inhibit tributary-mainstem connectivity, but does not require development of a series of hypothetical potential actions that might not be applicable and would, prior to implementation, require site-specific evaluation regardless. Site-specific analysis of any connectivity issues that arise will be necessary under either pathway, and under either pathway adaptive management would be needed to address

any connectivity issues. Therefore, this change remains protective of migration beneficial uses.

Action 2: Spawning Habitat Evaluation. Consultation required by this condition is in progress. Action 2 of Condition 6 is modified to consistently refer to "spawning habitat" and corrects the one instance where the condition refers to "spawning gravel" rather than "spawning habitat". As noted in the KRRC's Spawning Habitat Availability Report and Plan (SHARP), spawning habitat will be quantified by using a modified version of the Timber-Fish-Wildlife Cooperative Monitoring, Evaluation, and Research Committee's Salmonid Spawning Habitat Availability Survey. To qualify as spawning habitat under this survey method more than half the area of a patch must be comprised of spawning gravel that ranges in size from 8 millimeters (mm) to 128 mm. Spawning habit can be improved by actions beyond just gravel augmentation. Action 2 of Mainstem Spawning Aquatic Resource Measure in Condition 6 of the certification notes that other potential actions that may be taken to improve spawning habitat include installation of large woody material, riparian planting for shade coverage, wetland construction or enhancement, and cattle exclusion fencing.

Action 2 of the Mainstem Spawning Aquatic Resource Measure in Condition 6 is also updated to require field surveys and remote sensing efforts to quantify spawning habitat prior to and following drawdown, which will help establish the immediate Project impacts on spawning habitat and help determine what actions may be necessary to address impacts to spawning habitat if the target spawning habitat metrics are not initially met following drawdown. The action is updated to include the target metrics for spawning habitat in the tributaries (4,700 square yards) and mainstem Klamath River (44,100 square yards), which if not met will require the Licensee to implement additional actions to improve spawning habitat. The updates include a requirement that the Licensee shall assess the estimated spawning habitat benefits resulting from the proposed actions compared to the targets set forth in the SHARP. Specifying the target metrics, requiring information on the spawning habitat benefits of the proposed actions, and ultimately implementation of proposed actions required by this action will ensure protection of fish-related beneficial uses.

Additionally, Action 2 is changed to clarify annual reporting requirements by specifying minimum requirements such as a summary of monitoring results and a summary of actions implemented to improve spawning habitat if necessary.

Juvenile Outmigration Aquatic Resource Measure

Action 1: Mainstem Salvage of Overwintering Juvenile Salmonids. Action 1 of the Juvenile Outmigration Aquatic Resource Measure in Condition 6 of the certification is updated to clarify that the purpose of the surveys is to identify potential salvage locations based on the relative abundance of juvenile coho salmon and update the reference for such salvage efforts to be consistent with the NMFS Biological Opinion. This action is also updated to provide more specificity with new language that requires the Licensee to: (a) relocate juvenile coho salmon to off-channel ponds prior to drawdown; and (b) submit a technical memorandum identifying target capture locations

and methods of salvage of overwintering juvenile coho salmon to NMFS, CDFW, and the State Water Board at least six months prior to salvage. The updated specificity is consistent with NMFS 2021 Biological Opinion. The additions made to this action will help ensure that juvenile coho salmon are relocated, and that the best available, recently collected information is used to inform these salvage and relocation efforts. Specifying relocation areas, and identifying target capture locations and methods will ensure protection of fish-related beneficial uses.

Action 2: Tributary-Mainstem Connectivity Monitoring. No changes besides updated reference to the Tributary-Mainstem Connectivity Plan.

Action 3: Rescue and Relocation of Juvenile Salmonids from Tributary Confluence Areas. Action 3 of the Juvenile Outmigration Aquatic Resource Measure in Condition 6 of the certification is updated to remove Pacific lamprey from the Juvenile Salmonid Rescue and Relocation Plan. During finalization of the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, the Aquatic Technical Work Group (comprised of CDFW, Oregon Department of Fish and Wildlife, NMFS, USFWS, State Water Board, Bureau of Land Management, the Yurok Tribe, and the Karuk Tribe) determined that lamprey relocation was not necessary due to their ability to navigate through turbid waters and that lamprey should be allowed to volitionally out-migrate, as the success of relocation measures are unknown. Additionally, Action 3 has been updated to clarify the plan submittal timeline and consultation requirements.

Freshwater Mussels Aquatic Resource Measure.
The freshwater mussels translocation described under Condition 6 has been removed. The State Water Board's final EIR (Section 3.3.2.1) explains that four species of native freshwater mussels have been observed in the Klamath Basin: (1) Oregon floater (*Anodonta oregonensis),* (2) California floater (*Anodonta californiensis*), (3) western ridge mussel (*Gonidia angulate),* and (4) western pearlshell mussel (*Margaritifera falcata*). Oregon floater and California floater (commonly referred together as "*Anodata spp*.") occur in the mainstem Klamath River in the Hydroelectric Reach, in Lower Klamath Project reservoirs, in the reach (<15 miles) directly downstream of Iron Gate Dam, and in the Upper Shasta River.

Of the mussel species present in the Project area, *Anodata spp*. were the only mussel species that were found to be significantly impacted by Project implementation (SWRCB 2020). *Anodonta spp*. would likely be impacted by dam removal due to their close proximity to Iron Gate Dam, and their preference for the habitat stability that currently exists in Lower Klamath Project reservoirs and downstream of Iron Gate Dam. Under natural conditions *Anodonta spp*. would be unlikely to occur in the Middle and Lower Klamath River. A mussel translocation effort is unlikely to offset the projected impacts to *Anodonta spp* mainly due to a lack of suitable translocation habitat.

Additionally, during development of the FERC EIS, CDFW, KRRC, Oregon Wild, the Yurok Tribe, and the Karuk Tribe expressed concern over the potential for success of freshwater mussel translocation efforts. Concerns centered on the risks associated with

translocation, including the potential introduction and spread of disease, potential to displace or otherwise impact existing mussels, and the likelihood of limited or negligible success through translocation.

Given the lack of suitable habitat for translocation of *Anodonta spp.,* the recommendations against translocation of mussels by resource agencies and Tribes, and FERC's determination in the Final EIS not to recommend mussel translocation, the requirement to rescue and relocate mussels has been removed from this certification.

Condition 7 – Remaining Facilities
Condition 7 had no additional specific modifications.

Condition 8 – Public Drinking Water Supplies
Condition 8 had non-substantive changes to reflect the results of consultation. Discharges from the Project have the potential to impact the City of Yreka's water supply as drawdown of Iron Gate Reservoir could potentially damage a section of the City of Yreka's water supply pipeline, leaving the city without access to water. The amendment includes updates developed through consultation to specify that: (a) the Licensee coordinate with the City of Yreka to provide an uninterrupted water supply during replacement of the pipeline; and (b) the estimated water delivery outage timeframe is agreed upon between the City of Yreka and the Licensee prior to construction of the pipeline. These updates, as requested by the KRRC in light of the terms reached in agreement with City of Yreka, provide assurance that the City of Yreka maintains access to its water supply during and following Project implementation. Condition 8 is also updated to specify the chosen option for the replacement supply pipeline (i.e., pipeline across Daggett Road Bridge) based on coordination with the City of Yreka.

Condition 9 – Aquatic Vegetation Management
Condition 9 updates the citation to reference the most current National Pollutant Discharge Elimination System general permit for the control of algae and aquatic weeds to ensure the most current measures are implemented to protect water quality and beneficial uses from discharges of pollutants in the event the Licensee needs to control aquatic vegetation.

Condition 10 – Construction: General Permit Compliance and Water Quality Monitoring and Protection Plans
To address the FERC staff recommended modifications identified in the Final EIS, this condition requires the KRRC to develop and implement a California Erosion Control Plan that identifies any additional best management practices (BMPs) that will be used to control erosion and sediment during Project implementation beyond what is identified in the State Water Board's Construction General Permit[2]. Erosion and sediment BMPs are necessary to ensure construction discharges do not exceed water quality standards.

[2] National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order WQ 2022-0057-DWQ, NPDES No. CAS000002.

Additionally, Condition 10 was updated to include reference to the new Construction General Permit, which was adopted by the State Water Board on September 8, 2022 and becomes effective on September 1, 2023. Updates to Condition 10 also clarify that the Licensee must obtain water quality monitoring and protection plans for certain activities that are not covered by the Construction General Permit or other certification conditions. Inclusion of these updates will ensure that appropriate BMPs are implemented as part of Project construction activities to protect California's water quality and beneficial uses.

Condition 11 – Waste Disposal

Condition 11 includes non-substantive changes to update references in the condition to the KRRC's 2020 Definite Decommissioning Plan (rather than the 2018 Definite Plan) and the California Waste Disposal Plan, both of which have been developed by the KRRC since the April 2020 certification was issued.

The condition is also updated to note that on-site disposal sites will be restored consistent with the Construction General Permit and associated stormwater pollution and prevention plans rather than just noting the use of "topsoil and vegetation" for restoration of on-site disposal sites. These updates ensure the restoration of on-site disposal sites will meet the standards established in the Construction General Permit[2] and will be protective of water quality and beneficial uses.

The condition is updated to clarify that on-site disposal of inert, non-hazardous debris resulting from dam removal and other Project decommissioning activities may be buried at disposal sites identified in the Waste Disposal Plan, which the KRRC has developed and submitted for approval since the original certification was issued in April 2020.

Condition 12 – Hazardous Materials Management

Condition 12 includes non-substantive changes to update reference to the KRRC's 2020 Definite Decommissioning Plan and the California Hazardous Materials Management Plan. This amendment also updates Condition 12 to secondary storage requirements that were rendered redundant in light of the KRRC's commitment in its Hazardous Materials Management Plan, which is approved as part of this amendment, to store hazardous waste and materials in compliance with applicable laws and regulations and thereby protect water quality.

Condition 13 – Hatcheries

Construction and operation of a hatchery on Fall Creek will result in discharges to Fall Creek and the Klamath River. Beneficial uses of Fall Creek and the Klamath River that may be impacted by hatchery activities include but are not limited to: commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; marine habitat, migration of aquatic organisms; spawning, reproduction, and/or early development; aquaculture; and Native American culture.

On July 14, 2022, the KRRC filed with the State Water Board for review and approval a Hatchery Plan that was developed in consultation with State Water Board, CDFW, NMFS, North Coast Regional Board and FERC. The KRRC's Hatchery Plan proposed

two main modifications from its 2018 hatchery proposal: (1) removal of future operations at Iron Gate Hatchery; and (2) increase of fish production numbers at Fall Creek Hatchery. Removal of Iron Gate Hatchery operations eliminated it future operational impacts on water quality and beneficial uses.

Increases in the number of fish produced at a hatchery has the potential to increases discharges affecting water quality and impact beneficial uses associated with fish crowding and disease. On September 6, 2022, and September 29, 2022, NMFS and CDFW, respectively provided State Water Board staff with additional information that supports increased fish production numbers at Fall Creek Hatchery would not cause additional water quality and beneficial use impacts (NMFS, 2022; CDFW, 2022).

The NMFS and CDFW memoranda describe that operations of the Lower Klamath Project facilities contribute to multiple factors (e.g., changes in water temperature and nutrient and sediment transport dynamics) that lead to high salmonid mortality through infection with *Ceratanova shasta* (C. shasta), a fish parasite. NMFS' memorandum explains that with removal of the Lower Klamath Project facilities, several of the factors that drive high C.shasta infection rates will be eliminated or minimized such that future Fall Creek Hatchery operations are not anticipated to experience similar disease conditions (NMFS, 2022).

NMFS' memorandum explains that spawning salmon carcasses are a major vector for disease transmission. With removal of the Lower Klamath Project facilities, salmonids will have access to over 360 additional river miles which will increase dispersal of spawned salmon carcasses, thereby decreasing the potential for high disease infection zones to form following dam removal (NMFS, 2022). Removal of Lower Klamath Project hydroelectric facilities in combination with increased fish production at Fall Creek Fish Hatchery will remove many of the underline conditions that cause high infection and disease in anadromous fish, while supporting increased salmonid fish populations. As such, increasing the number of fish produced at Fall Creek Fish Hatchery is not anticipated to result in increased disease or crowding conditions. Consistent with the final Hatchery Plan analyzed in FERC's final EIS and the NMFS's BO, Condition 13 has been revised to remove requirements for future operation at Iron Gate Hatchery.

Condition 14 –Restoration

Restoration activities are important to ensure species and ecosystem recovery from the discharges associated with drawdown and dam removal, and may also result in discharges to the Klamath River that could impact water quality. Beneficial uses that would be impacted by discharges from dam removal and restoration-related discharges include: groundwater recharge; navigation; water contact recreation; non-water contact recreation; commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; and Native American culture.

On August 26, 2022, FERC released a Final EIS that requires the KRRC to modify its Reservoir Area Management Plan. FERC staff's recommended modifications identified in FERC's Final EIS include: (1) monitoring and adaptive management of cool-water areas from the upper end of J.C. Boyle Reservoir to Cottonwood Creek; (2) additional details on preliminary maps of proposed restoration activities (e.g., areas of grading, water runoff control measures, plantings, seedings, mulching, and irrigation); and (3) methods to ensure irrigation water pumps are screened to prevent fish entrainment. FERC staff's recommended modifications do not result in additional or increased water quality impacts associated with Project-related restoration activities. FERC's modifications require further actions and information that may result in additional water quality protections during Project implementation, and improved recovery from the potential impacts of sediment discharges from drawdown and dam removal.

Consistent with the Reservoir Area Management Plan analyzed in FERC's Final EIS, Condition 14 is revised to include FERC staff's recommended modifications as well as the KRRC's requested changes to limit fencing requirements to non-reservoir dependent wetlands and remove timeline restrictions on large woody material placement. The KRRC's August 11, 2022, Reservoir Area Management Plan (dated August 2022) proposed several minor changes from its 2018 restoration proposal including: (1) limiting fencing requirements for wetlands to only non-reservoir dependent wetlands[3]; and (2) broadening the timing and location requirements for large woody material placement. Limiting fencing to non-reservoir dependent wetlands excludes fencing requirements for wetlands that dependent on infrastructure of the Lower Klamath Project such as Project reservoirs and penstocks. Infrastructure dependent wetlands will likely desiccate following infrastructure removal, therefore fencing these wetlands does not ensure their protection. The KRRC's Restoration Plan includes wetland and riparian habitat mitigation ratios that remain unchanged and ensure the Project is protective of wetland and riparian habitat. Additionally, allowing large woody material placement throughout restoration activities and locations may result in efficiencies for Project implementation while maintaining restoration metrics. The Restoration Area Management Plan includes protocols for adequate placement of large woody material.

Condition 15 –Water Supply Monitoring and Management

Project discharges associated with reservoir drawdown have the potential to impact local groundwater levels. California law provides for a human right to water, under Water Code, section 106.3. Condition 15 is updated to reduce the range of potential groundwater impacts from 2.5 miles to 1,000 feet. The KRRC provided additional information and analyses regarding groundwater connectivity in the Project footprint indicate that groundwater wells located more than 1,000 feet from the reservoirs do not share any hydrologic connectivity with the reservoirs (KRRC, 2021). Condition 15 is also updated to require that the Licensee disclose in its public outreach letters that

[3] Non-reservoir dependent wetlands are wetlands that are not anticipated to be impacted by drawdown and their primary hydrological sources are the Klamath River, a stream or seep, and/or precipitation.

landowners must enroll in the groundwater well monitoring program to be eligible for the Local Impact Mitigation Fund.

On August 26, 2022, FERC released its Final EIS, which includes staff recommended modification that requires the KRRC to modify its Fire Management Plan to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities. FERC staff's recommended modifications do not result in additional or increased water quality impacts associated with Project-related activities. Additionally, ensuring that appropriate emergency planning occurs will reduce the harm of water supply availability changes in the event of a fire.

Additionally, Condition 15 had non-substantive changes that identify which Project reservoirs this condition relates to and clarifies that the Deputy Director may require additional monitoring on lands under the control of the Licensee.

Condition 16 – Amphibian and Reptile Management
Condition 16 had no additional specific modifications.

Condition 17 – Bald and Golden Eagle Management
Project discharges associated with drawdown activities have the potential to impact fish through increased turbidity, as well as through changing the flow and discharge rates through the hydroelectric reach. Such discharges will temporarily impact, and have the potential to result in long-term impacts to, water quality and beneficial uses, including fishery-related beneficial uses such as: cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development. Bald eagles rely on fish as their main source of nutrition. Condition 17 is updated to require the KRRC to implement the Incidental Take Permit issued by the United States Fish and Wildlife Service, which had not been issued at the time the Project certification was originally issued. USFWS is a trustee agency with responsibility for and expertise in the protection of bald and golden eagles. Implementation of the incidental take permit issued for the Project on October 14, 2022, and effective October 17, 2022 and any amendments thereto will ensure that Project-related activities do not result in take of bald or golden eagles, and amendment of the certification to match its terms will avoid confusion in implementation of protective measures.

Condition 18 – Slope Stability
Non-substantive changes are made to Condition 18 to update the plan submittal timeline and references to the KRRC's 2020 Definite Decommissioning Plan and the California Slope Stability Monitoring Plan, which were not available when the original Project certification was issued. The condition was also updated to expand the slope stability monitoring methods that could be used in areas of limited accessibility, which would increase the chances of early detection of slope instability and provide increased water quality protection from potential discharges due to slope failure.

Condition 19 – Recreation Facilities

Project discharges associated with drawdown, changed discharge and flow rates through the hydroelectric reach, and other Project-related activities (e.g., restoration, tree removal from Wards Canyon Run) have the potential to impact water quality at existing and future recreation sites. On August 26, 2022, FERC released its final EIS for the Project which includes a staff recommended modification to consult with American Whitewater and Upper Klamath Outfitters Association to schedule construction activities and access restrictions during construction to minimize adverse effects on whitewater boaters. Condition 19 is updated to include this consultation provision for consistency with FERC staff's recommendations in the EIS and the KRRC's October 2022 submittal to the State Water Board that updates its Recreation Plan to incorporate FERC staff's recommended measure. FERC staff's recommended modification does not result in additional or increased water quality impacts associated with Project-related recreation activities. Rather, the FERC staff recommended modification require may result in additional water quality protections for water contact recreation and boating beneficial uses during Project implementation.

Since the original certification was issued in April 2020, the KRRC has added tree removal in the Wards Canyon Run to the Project to address recreational boater safety concerns. Tree removal has the potential to result in discharges of sediment and other pollutants (e.g., oil, grease, and other chemicals associated with equipment used to remove the trees) that could impact water quality, including beneficial uses (municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-water contact recreation; commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; shellfish harvesting; and Native American culture). Condition 19 is also updated to note that the KRRC must submit a water quality monitoring and protection plan under Condition 10 of the certification to assure appropriate BMPs are implemented for water quality protection for any tree removal activities in the Ward's Canyon Run. Condition 10 includes a requirement that the Licensee must develop site-specific water quality monitoring and protection plans that shall be implemented following Deputy Director approval and provides the Deputy Director with the ability to require modifications to the plan to ensure it adequately protects water quality. Compliance with Condition 10 will ensure that appropriate best management practices are implemented to protect water quality, including beneficial uses, during any tree removal work in the Ward's Canyon Run.

Additionally, Condition 19 had non-substantive changes to clarify the timeline in relation to submitting the Recreation Facilities Plan, consultation requirements, and to update references to the 2018 Definite Plan to the 2020 Definite Decommissioning Plan.

Condition 22 – Tribal Water Quality Standards

Project discharges associated with drawdown, dam removal, and restoration have the potential to impact water quality throughout the California portion of the Klamath River (Klamath River from California/Oregon state line to Pacific Ocean). Section 518 of the

Attachment 2: Lower Klamath Project License Surrender Water Quality Certification Amendment – Discussion of Amendments

Clean Water Act allows federally-recognized tribes to apply for and receive approval from the United States Environmental Protection Agency (USEPA) to be treated in the same manner as a state under the Clean Water Act. This authority can include, among other authorities, the ability to adopt and implement water quality standards for a tribe's reservation.

Since issuance of the State Water Board's certification in April 2020, the Karuk Tribe and Resighini Rancheria have received treatment-in-the-same-manner-as-a-state-status. Condition 22 has been updated accordingly.

Additionally, FERC staff recommended that all monthly water quality reports described in Condition 1 of the State Water Board's certification should be submitted to tribes with treatment-in-the-same-manner-as-a-state-status. The KRRC agreed with this recommendation and the Water Quality Monitoring Plan approved in Condition 1 incorporates this requirement. Condition 22 is updated to reflect this additional reporting to tribes as specified in the approved Water Quality Monitoring Plan. Providing reports to the tribes with treatment-in-the-same-manner-as-a-state-status will allow for timely evaluation of data and identification of potential corrective actions and adaptive management that will provide for further protection of water quality.

ATTACHMENT 3

AMENDED CEQA FINDINGS AND STATEMENTS OF OVERRIDING CONSIDERATIONS FOR THE LOWER KLAMATH PROJECT LICENSE SURRENDER

Prepared by:
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Division of Water Rights
P.O. Box 2000
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November 2022

Amended CEQA Findings and Statements of Overriding Considerations for the Lower Klamath Project License Surrender

November 2022

Lead Agency:
State Water Resources Control Board

For additional information concerning this document please contact the Water Quality Certification Program at WR401Program@waterboards.ca.gov

Introduction

The State Water Resources Control Board (State Water Board or Board) prepared California Environmental Quality Act (CEQA) findings and statements of overriding considerations to accompany the certified *Final Environmental Impact Report for the Lower Klamath License Surrender* (Final EIR) in April 2020, at the time of issuance of the water quality certification (certification) for the Lower Klamath License Surrender (Proposed Project). Subsequent changes to the Proposed Project require amendment of the April 2020 water quality certification. Additionally, the Federal Energy Regulatory Commission (FERC or Commission) has completed additional environmental review under the National Environmental Policy Act, namely the *Final Environmental Impact Statement for Hydropower License Surrender and Decommissioning, Lower Klamath Project – FERC Project No. 14803-001, Klamath Hydroelectric Project-FERC Project No. 2082-063, Oregon and California* (EIS). Under Public Resources Code, section 21166.2, these documents satisfy the requirements of CEQA for this project. The Board has amended the CEQA findings and statements of overriding considerations in light of the certification amendments and additional environmental review.

The Lower Klamath License Surrender (Proposed Project) is a restoration project that involves the decommissioning and deconstruction of four dams (J.C. Boyle, Copco 1, Copco 2, and Iron Gate) and associated facilities and is located on, and adjacent to, the Klamath River in Siskiyou County, California and Klamath County, Oregon. The underlying purpose of the Proposed Project is the timely improvement of water quality related to the Lower Klamath Project downstream of J.C. Boyle Dam and the restoration of anadromous fish access upstream of Iron Gate Dam (the current barrier to anadromy). The State Water Board and FERC have identified four objectives for the Proposed Project:

1. Improve the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to *Microcystis aeruginosa* and associated toxins, water temperature, and levels of biostimulatory nutrients.

2. Advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation.

3. Restore volitional[1] anadromous fish passage in the Klamath Basin to viable habitat currently made inaccessible by the Lower Klamath Project dams.

[1] FERC's EIS does not specify that the fish passage be volitional.

4. Ameliorate conditions underlying high disease rates among Klamath River salmonids.

A more detailed description of the Proposed Project is provided in Section 2 of Volume I of the EIR, *Project Description*, and in Section 2.1 of the EIS, *Proposed Action*.[2]

As described in the EIR, Vol. III, Section 3.3, the Klamath River was once one of the largest salmon rivers on the West Coast, but the fishery has declined in part due to the establishment and operation of the hydroelectric facilities that constitute the Lower Klamath Project (FERC Project No. 14083). Coho salmon have been listed as threatened under the Endangered Species Act. In addition to the facilities' contributions to fisheries' declines, the facilities are sources of contribute to a number of water quality problems, including the development of annual toxic blue-green algae blooms that have triggered annual public health warnings since 2005. The EIR and EIS analyze the potential impacts of removal, and find that the Proposed Project would further restoration purpose and objectives described above, and is the environmentally superior and preferred alternative. The water quality impairments and salmonid decline have had a profound effect on tribes for whom salmonids are an irreplaceable element of sustenance and culture. (See e.g. EIR, Vol. 1, pages 2-21 to 2-22, 3-812 to 3-813, Vol. III, page 2-69.) The economic effects of Klamath River salmonid declines on fishing communities along the West Coast have also been significant, triggering commercial salmonid fishing restrictions and closures. (See e.g. EIR, Vol. 1, pages 2-21 to 2-22, 5-5.) In furthering the purpose and objectives of the Proposed Project, it is anticipated that the social and economic harms linked to the environmental damage and fishery declines would likewise be ameliorated, although uncertainty remains regarding future harvest decisions. (See EIS, pages 3-244 to 3-246, 3-506). Water Quality Certification for the Lower Klamath Project, Section 4.0 Analysis, pages 20-27 provides more

[2] The EIS was prepared under the National Environmental Policy Act, which, unlike the California Environmental Quality Act, does not provide for specific consideration of mitigation measures. The types of changes considered to the Proposed Action in the second and third alternatives presented in the EIS (Mandatory Conditions and Proposed Action with Staff's Modifications), are akin to the type of changes that CEQA would consider to be mitigation, rather than as alternatives to undertaking the Proposed Project. (See EIS, page 4-1 ["As a result of [continued agency] consultation, and the minor nature of [FERC] staff's modifications, the overall effects and benefits of the proposed action with staff modifications are not substantively different from the proposed action.].) Therefore, the State Water Board considers the adjustments discussed in the Proposed Action with Staff's Modifications as mitigation measures rather than as separate alternatives. The actions discussed in the Mandatory Conditions section are included in the Proposed Action with Staff's Modifications and are not considered separately, as was done in the EIS, which did not separately analyze the two sets of changes to the Proposed Project.

detailed summary of the water quality related aspects of the Proposed Project, and the role of the Lower Klamath Project facilities in the larger context of the Klamath Basin.

The State Water Board is the lead agency for the Proposed Project under the California Environmental Quality Act (CEQA) because it issued a water quality certification for the Proposed Project pursuant to Section 401 of the Clean Water Act. The State Water Board issued a draft EIR in December 2018, recirculated portions of a draft EIR in December 2019, and the Final EIR in April 2020. FERC released a draft environmental impact statement on February 25, 2022, and its final EIS in August 2022.

These environmental review documents, along with the following documents and categories of documents constitute the record of the proceedings for this certification amendment: KRRC's application for water quality certification filed September 23, 2022, and amended by KRRC's letter of October 10, 2022; KRRC's application for license surrender, filed November 17 2020; management plans submitted for State Water Board approval; memoranda from California Department of Fish and Wildlife, the National Marine Fisheries Services, and Stillwater Sciences, dated September 29, 2022, September 6, 2022, and August 29, 2022, respectively, that discuss proposed Project changes at Fall Creek Hatchery and regarding drawdown timing on aquatic resources; and correspondence and other FERC filings related to the changes in the Proposed Project. The Division of Water Rights is the custodian of these records, which are maintained in electronic files on the State Water Board's system: please contact Philip Meyer by e-mail at Philip.meyer@waterboards.ca.gov with any questions.

CEQA includes a declaration of policy that public agencies should not approve projects that will result in significant environmental effects if there are feasible means of mitigating such effects or feasible project alternatives that would substantially lessen the significance of such effects. (Pub. Resources Code § 21002.) Subdivision (a) of Section 15091 of the CEQA guidelines sets out three possible written findings a public agency must make (with accompanying rationale) in order to approve or carry out a project when the project EIR identifies one or more significant environmental effects. The possible findings are:

> (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
>
> (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers,

> make infeasible the mitigation measures or project alternatives identified in the final EIR.

In other words, for each significant impact, the agency must find that the impact has been mitigated or avoided, that the ability to require mitigation or avoidance lies with another agency (which has required or should require the same), or that specific considerations make mitigation or avoidance infeasible.

However, if feasible mitigation measures or project alternatives that avoid or substantially lessen the significant impacts are not available or cannot be implemented, CEQA permits a public agency to balance the benefits of a proposed project against the project's unavoidable environmental risks and to approve or carry out the project if the risks are considered acceptable. (Cal. Code Regs., tit. 14, § 15093(a).) In these circumstances, subdivision (b) of Section 15093 of the CEQA Guidelines requires the agency to make a statement of overriding considerations by stating in writing "the specific reasons to support its action based on the final EIR and/or other information in the record."

The State Water Board's CEQA findings and statements of overriding considerations for the Lower Klamath Project License Surrender are presented below, organized by resource area.

Water Quality

Overview

As noted above, the Proposed Project is a restoration project with an underlying purpose which includes timely water quality improvements related to the Lower Klamath Project. Objectives of the Proposed Project include improvement of the long-term water quality impairments associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to cyanobacteria and associated toxins, water temperature, levels of biostimulatory nutrients, and amelioration of conditions underlying high disease rates among Klamath River salmonids.

The Proposed Project includes several components that are anticipated to have a significant effect on water quality in the short term but are necessary to accomplish the intended long-term water quality improvements. Actions like drawing down the reservoirs, pre-construction and deconstruction activities, post-deconstruction release of trapped sediment, restoration work, and the return of the Klamath River in California to free-flowing riverine conditions could result in short-term impacts to water quality parameters. For example, removal of the Lower Klamath Project Dams will result in the release of accumulated sediments that are currently trapped behind the dams into the Klamath River. Over the short term, this effect is considered significant because it will result in increased levels of suspended sediment concentrations and unavoidable because measures that might avoid the effect, such as removing the sediment from the

reservoirs prior to removal of the dams, are not feasible. However, over the long term this impact is not considered to be significant because Klamath River flows will flush the released sediment down and out of the river and suspended sediment concentration levels will return to modeled background levels. And at the same time, removal of the Lower Klamath Project Dams will be beneficial with respect to water temperatures in some Klamath River reaches over the short and long term.

The EIR[3] examines the potential effect of the Proposed Project on water temperature, suspended sediments, nutrient levels, dissolved oxygen, pH, chlorophyll-a and algal toxins, and inorganic and organic contaminants.[4] As discussed in detail in EIR Section 3.2 and EIS Section 3.3, the temperature impacts (including Potential Impacts 3.2-1 and 3.2-2); long-term sediment impacts (including Potential Impacts 3.2-3 (long term), 3.2-5, and 3.2-6); nutrient impacts (including Potential Impacts 3.2-7, 3.2-8), short-term dissolved oxygen impacts for the Middle Klamath River[5] downstream from the Salmon River, the Lower Klamath River, and the Klamath River Estuary (See Potential Impact 3.2.9, EIS pages 3-100 to 3-101 and Figures 3.3-37 to 3.3-39), long-term dissolved oxygen impacts (including Potential Impact 3.2-10), pH impacts (including Potential Impact 3.2-11), Microcystin, algal toxins, and chlorophyll-a (including Potential Impact 3.2-12), contaminant impact on aquatic species (including Potential Impact 3.2-14), and water quality downstream of hatcheries (See Potential Impact 3.2-17[6] (short and long term for water quality in the Middle Klamath River downstream of Iron Gate Hatchery and for water quality except water temperature and dissolved oxygen in Fall Creek

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[3] References to "the EIR" mean the complete Environmental Impact Report for the Lower Klamath License Surrender Project, including the Draft EIR, Volumes I and II and the Recirculated Portions of the Draft EIR (as modified in Volume II) and Volume III of the EIR (responses to comments and text changes from the Draft EIR). Please note that page numbers referencing the Draft EIR may have minor updates in Volume III. In some instances, Volume numbers are provided for additional specificity.

4 The EIS examines the same components, except that it considers Microcystin, rather than chlorophyll-a and algal toxins and does not separately analyze organic and inorganic contaminants.

5 This document uses the river reach definitions from the EIR, which defines the Middle Klamath River, Lower Klamath River, and Klamath River Estuary as distinct reaches downstream of Iron Gate Dam. (Vol. I, page ES-2,) Please note that the EIS uses the term "Lower Klamath River" to denote the entire reach below Iron Gate Dam. (EIS, p. xxix)

[6] This determination is unchanged by the amendments to the hatchery operation plan from that analyzed in the 2020 EIR, in that it closes Iron Gate Hatchery, and increases production at Fall Creek Hatchery. Fall Creek Hatchery will continue to operate with a settling system and under a NPDES permit. Information from CDFW and NMFS indicates that the increased production will not cause additional impacts (CDFW, 2022; and NMFS 2022), and the EIS identified no additional water quality impacts associated with the plan revision.

downstream of Fall Creek Hatchery) will either not be significant or will be beneficial. Beneficial effects of the Proposed Project include short- and long-term water temperature improvements in the Hydroelectric Reach and the Middle Klamath River to the confluence with the Salmon River, permanent elimination of internal ammonia orthophosphate loading from reservoirs, short- and long-term elimination of summer and fall extremes in dissolved oxygen (DO) concentrations in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam, short- and long-term decreases in summer and fall pH and daily pH fluctuations in the Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam, and short- and long-term reductions of chlorophyll-a and algal toxins for the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects to water quality are set out below.

CEQA Findings

Potential Impact 3.2-3 (short term) & EIS page 3-86

The State Water Board finds that increases in suspended sediments due to the release of sediments currently trapped behind the dams would be a significant environmental impact over the short term (two years following dam removal) for the Hydroelectric Reach, Middle Klamath River, Lower Klamath River, Klamath River Estuary, and Pacific Ocean nearshore environment. Three mitigation measure, FERC Staff Modification, Bullet 3, 4, and 14 have been required or incorporated into the Proposed Project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR and EIS explain that the Lower Klamath Project dams trap sediments that in the absence of the dams would be carried downstream by normal Klamath River flows. During reservoir drawdown, these accumulated sediments will mobilize and be flushed downstream, increasing levels of suspended sediment concentrations and the duration of events of elevated suspended concentrations. After reservoir drawdown, remaining exposed sediments could be washed into the Klamath River until they are stabilized, especially during storm events. Beginning at page 3-82, the EIR discusses these impacts in the various Klamath River reaches and presents charts that illustrate the expected magnitude and duration of increased sediment levels. The EIS discusses these impacts beginning at page 3-83. Though the effect will occur over a short term (will not be present after the end of the second year after dam removal), it will be significant in that suspended sediment concentrations will reach levels that are harmful to salmonids and exceed water quality objectives.

The impact will occur because there are accumulated sediments in the bottoms of the Lower Klamath Project reservoirs that will be released. It is not feasible to fully mitigate

the impact, because there is no way to physically remove all of the accumulated sediments or otherwise avoid significant release during drawdown. Dredging would be expected to leave a minimum of 57 percent of the accumulated sediment which would still result in significant sediment impacts from reservoir drawdown, providing only a marginal benefit to fish. Furthermore, the dredging itself would be expected to result in considerable environmental impacts to terrestrial resources and possibly to cultural resources (EIR, p. 3-95). Extending the drawdown period might reduce the overall volume of sediment that is mobilized, but would increase the duration of events of elevated suspended sediment concentrations and so would not mitigate, and would potentially increase, the impact. (*Id.*) While overall reduction in sediment release is not feasible, implementation of FERC-Staff Modification, Bullet 4[7], which specifies additions to Water Quality Monitoring Plans that would allow for more timely suspended sediment load monitoring, and therefore potentially for real-time adaptive management with the potential to reduce adverse impacts, would reduce the impact, even though it would remain significant with this mitigation measure. (EIS, pages 3-111 to 3-112.)

The EIS, Bullet 14, requires the KKRC to coordinate with the United States Bureau of Reclamation, United States National Marine Fisheries, and Unites States Fish and Wildlife Service regarding any potential changes to operation of the Klamath Irrigation Project that could reduce the discharge peaks into the hydroelectric reach while the reservoirs are being drawn down. (EIS, page 4-33) This could help avoid refill of the Project reservoirs during high inflow events that could occur during drawdown, potentially reducing the duration of high SSCs downstream.

The EIS, Bullet 4, requires also requires that the KRRC modify the California Sediment Deposit Remediation Plan to include the period of time (years) during which KRRC would assess sediment deposits on parcels with a current or potential residential or agricultural land use, for which the property owner has notified KRRC of a sediment deposit that may be associated with reservoir drawdown activities.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams would result in significant short-term increases in suspended sediment levels in the Klamath River. For example, under the Two-Dam Removal Alternative, over 90 percent of the sediment transport anticipated under the Proposed Project would still occur (EIR, page 4-190). Under the Continued Operations With Fish Passage Alternative, the impact would be avoided because the Lower Klamath Project dams would not be removed and impacts related to construction of fish passage could be mitigated to less than significant. However, this alternative would result in significantly fewer benefits for

[7] The Proposed Action with [FERC] Staff's Modifications includes a series of fourteen bullets on EIS pages 2-73 to 2-75 that are aimed at reducing the impacts of the Proposed Project. This document refers to the numerical order of the bulleted modifications as a reference to the measures described therein.

environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so is not environmentally superior.

Potential Impact 3.2-4

The State Water Board finds that the potential increase in suspended material from stormwater runoff due to pre-construction, dam deconstruction and removal, and restoration activities in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Section 3.2 of the EIR explains that the following activities would have the potential to affect water quality: pre-construction activities; dam removal activities; restoration activities; modification of non-natural fish barriers within the historical reservoir footprints as needed to enable volitional fish passage, which may include in-water work; restoration activities; new recreation area facilities development at river sites; and any remaining construction activities for the eight recreation sites to be removed. All of the aforementioned activities could result in the disturbance of soil within the Limits of Work and result in loose sediment that could then be suspended in stormwater runoff during rainfall events.

At the time of EIS issuance, within the Limits of Work (Figures 2.2-5, 2.7-1, and 2.7-3), the Proposed Project included best management practices (BMPs) for construction and other ground-disturbing activities to reduce the activities' potential impacts to water quality in wetlands and other surface waters.

The proposed BMPs focus on general stormwater-related contamination, but their implementation was expected to also minimize or eliminate the potential for construction-related increases in suspended material that could enter wetlands and other surface waters located within the Limits of Work, including the Hydroelectric Reach, tributaries of the Klamath River that enter this reach (as appropriate), or the Middle Klamath River immediately downstream of Iron Gate Dam. The Proposed Project at the time did not, however, specifically identify BMPs for pre-construction, reservoir restoration, or upland restoration activities that would occur within the Limits of Work. Further, the proposed BMPs were not sufficiently comprehensive to avoid all potential violations of water quality standards or other degradation of water quality in affected portions of the wetlands, Hydroelectric Reach, tributaries to the Klamath River that enter this reach (as appropriate), or the Middle Klamath River immediately downstream of Iron Gate Dam, during these other periods of Proposed Project activity. Such violations of water quality standards or other related degradation of water quality were found to be a significant impact without mitigation. Implementation of mitigation

measures WQ-1, TER-1, and HZ-1were found to reduce any potential impacts not already addressed by the BMPs to less than significant.

Mitigation Measure WQ-1 Best Management Practices would reduce potential impacts to water quality due to pre-construction, dam removal, and restoration-related activities. For the protection of all potentially affected waterbodies within the Limits of Work (see Figures 2.2-5, 2.7-2, and 2.7-4), the proposed construction BMPs (listed below) shall apply to all ground-disturbing activities occurring for the Proposed Project.

- Pollution and erosion control measures will be implemented to prevent pollution caused by construction operations and to reduce contaminated stormwater runoff.
- Oil-absorbing floating booms will be kept onsite, and the contractor will respond immediately to aquatic spills during construction.
- Vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids. If such leaks or drips do occur, they will be cleaned up immediately.
- Equipment maintenance and/or repair will be confined to one location at each project construction site. Runoff in this area will be controlled to prevent contamination of soils and water.
- Dust control measures will be implemented, including wetting disturbed soils.
- A Stormwater Pollution Prevention Plan (SWPPP) will be implemented to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering waterways or waterbodies.

Construction associated with these activities shall be subject to the BMPs required under the Construction General Permit.

Mitigation Measure TER-1 Establish a 20-ft Buffer Around Delineated Wetlands. This measure establishes a minimum of a 20-foot buffer around all delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would not result in a significant environmental impact. The buffer may be adjusted (e.g., made larger or smaller) based on site-specific conditions, as determined by a qualified biologist acceptable to USACE, as necessary to ensure adequate protection of the delineated wetlands. The State Water Board has the authority to include this mitigation measure in its water quality certification for the project.

Mitigation Measure HZ-1 Hazardous Materials Management. This measure requires submittal of a Final Hazardous Materials Management Plan to the State Water Board Deputy Director for review and approval no later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities. This mitigation also requires the Final Hazardous Materials Management Plan to include any modifications to the proposed Hazardous Materials Management Plan, be developed in coordination with State Water Board staff

to provide the same or better level of protection regarding procedures for: (1) proper disposal or abatement of hazardous materials encountered during Proposed Project activities; (2) proper storage, containment, and response to spills caused by the Proposed Project; and (3) proper removal and disposal of septic tanks as part of the Proposed Project.

The Final Hazardous Materials Management Plan shall also describe how the elements of the KRRC's proposed Health and Safety Plan (Appendix B: Definite Plan – Appendix O4), the Spill Prevention, Control, and Countermeasure Plan (Appendix B: Definite Plan – Appendix O4), the Emergency Response Plan (Appendix B: Definite Plan – Appendix O4), and the Traffic Management Plan (Appendix B: Definite Plan – Appendix O2) are coordinated together, and as such, adequately protect water quality with respect to hazardous materials management.

As part of this mitigation, the KRRC is required to provide monthly reporting to the State Water Board detailing the volumes of hazardous materials and wastes that were cleaned up and disposed of from construction activities.

Since adoption of the EIR, the Proposed Project has changed to incorporate the key elements of WQ-1, TER-1, and HZ-1 as described in the California Terrestrial and Wildlife Management, the Reservoir Area Management Plan, and the Hazardous Materials Management Plan. The KRRC has sought coverage under the Construction General Permit and is required to comply with BMP's for projects not covered by the Construction General Permit under Condition 10 of the water quality certification.

Additionally, FERC staff have recommended, and the KRRC has agreed, to FERC EIS Bullet 2: "Develop, in consultation with appropriate California agencies and Tribes, an erosion and sediment control plan that identifies erosion and sediment control best management practices (BMPs) to minimize pollution from sediment erosion caused by facilities removal and restoration activities that would take place in California."

The FERC EIS Bullet 2 is designed to address sediment and erosion control BMPs pre-actively, and thus limit their adverse effects, in light of concerns raised by Siskiyou County. (EIS, page 3-110 to 3-111.) It is required by amendments to water quality certification Condition 10.

Incorporation of the mitigation measures and requirements discussed above reduces this impact to less than significant.

Potential Impact 3.2-9 (short term in the Hydroelectric Reach and Middle Klamath River from Iron Gate Dam to the Salmon River) and EIS p. 3-101

The State Water Board finds that increases in biochemical oxygen demand (BOD) and reductions in dissolved oxygen due to release of sediments currently trapped behind the dams would be a significant environmental impact over the short-term for the Hydroelectric Reach and Middle Klamath River from Iron Gate Dam to the Salmon River

and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR and EIS explain that because reservoir sediment deposits contain unoxidized organic matter from algal detritus (see EIR Section 3.2.2.3 Suspended Sediments. EIS Section 3.3.3.3 Nutrients, Dissolved Oxygen and pH), resuspension of these materials during reservoir drawdown is likely to reduce oxygen concentrations in downstream reaches until oxygen consumption is balanced by reaeration as the river continues to flow. Beginning at page 3-119, the EIR discusses these impacts in the various Klamath River reaches based on modeling to estimate the potential magnitude of oxygen depletion and recovery at various suspended sediment concentration (SSC) levels. (See also EIS, pages 3-99 to 3-101.) Though the effect will occur over a short term (will not be present after the end of the second year after dam removal), it will be significant in that reductions in dissolved oxygen due to release of sediment deposits would substantially exacerbate an existing exceedance of applicable water quality standards.

As indicated under Potential Impact 3.2-4 and EIS page 3-86 above, the impact will occur because it is not possible to physically remove reservoir bottom sediments prior to (Lynch 2011) or otherwise avoid release during drawdown. Analysis of potential alternatives to the Proposed Project shows that dam removal alternatives to the Proposed Project that would alter the timing and amount of sediment mobilization would result in the same or greater adverse impacts to designated beneficial uses and/or fish (see Section 4.1.1.4 Elimination of Potential Alternatives that Would Not Avoid or Substantially Lessen Significant Environmental Effects of the Proposed Project). The EIS includes consideration of DO impacts in light of schedule adjustments between the EIR and 2022, at pages 3-100 to 3-101. The short-term significant impact of increased instantaneous oxygen demand and BOD and decreased dissolved oxygen in the Middle Klamath River upstream of the Salmon River cannot be avoided or substantially decreased through reasonably feasible mitigation.

The No Project Alternative, the No Action Alternative and the Continued Operations with Fish Passage Alternative would not release the reservoir sediment stored behind the Lower Klamath Project dams because these alternatives would not remove the existing dams. Thus, there would be no short-term increase in suspended sediment concentrations (SSCs) during drawdown and there would be no significant impact. However, there are large summertime variations in dissolved oxygen in the Hydroelectric Reach and dissolved oxygen concentrations in the Middle Klamath River immediately downstream of Iron Gate Reservoir under the existing conditions and the Continued Operations with Fish Passage Alternative. These concentrations fall below the Basin Plan minimum dissolved oxygen criteria (Section 3.2.2.5 Dissolved Oxygen), in either the short or the long term, and result in adverse conditions. In addition, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and

would not go as far towards meeting the project's restoration purpose and objectives, and so these three alternatives are not environmentally superior.

Potential Impact 3.2-13, & EIS page 3-19 and 3-23

The State Water Board finds that direct or indirect human exposure to inorganic and organic contaminants due to release and exposure of reservoir sediment deposits is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that because the Proposed Project will result in the release of sediments currently trapped behind the Lower Klamath Project dams, there is a potential for human exposure to inorganic and organic contaminants in the sediments. (EIR, pages 3-139 to 3-151.) The primary pathways for human exposure would be direct contact with reservoir sediments left in the reservoir footprints or deposited on the river banks or by eating fish or shellfish exposed to contaminants. People could also potentially be exposed to contaminants in reservoir sediments transported down the Klamath River by river waters. The EIR's analysis shows that it is unlikely that people will be exposed to contaminants via contact with sediment in the reservoirs footprints, or on Klamath River banks, or eating contaminated fish or shellfish, but that there is potential in the short term (up to approximately ten months after drawdown) for human exposure to contaminants in sediments that are transported downstream.

More specifically, in the Hydroelectric Reach, exposure to river water containing sediment-associated inorganic or organic compounds would potentially cause substantial adverse impacts on human health and thus is considered potentially significant for the short term. Similarly, downstream of Iron Gate Dam, the potential for exposure to harmful levels of contaminants in river water is expected to persist for approximately up to ten months after drawdown begins. The potential impact would not extend beyond the end of post-dam removal year 1, as modeling shows that suspended sediment concentrations will return to background levels during that time period. This significant impact would potentially occur if river water were used as a drinking water supply during the short-term period.

Mitigation Measure WQ-2 will reduce the potential impact to less than significant because it requires the KRRC to identify and implement appropriate measures to prevent the Proposed Project from resulting in service of water that fails to meet drinking water quality standards. Potential actions include treatment of water to attain drinking water standards or the provision of an alternate potable water supply to affected areas. In addition, the EIR concludes that it is unlikely that the deposition of potentially contaminated sediments along the Klamath River banks would result in a significant impact because the potential for exposure (to arsenic, specifically) is expected to remain within background conditions. In an abundance of caution, however, the EIR includes Mitigation Measure WQ-3, which requires the KRRC to

assess sediments deposited along the Middle and Lower Klamath River to determine whether concentrations of arsenic exceed background levels. If this monitoring shows that the deposited sediments are contaminated in excess of background levels, the KRRC is required to remove or cap the deposits to protect against the possibility of human exposure.

FERC Staff Modification, Bullet 3 further refines this requirement by including the years during which KRRC would provide the assessments described in WQ-3. (See FERC EIS page 3-23.)

Condition 4 of the amended water quality certification requires compliance with Mitigation Measure WQ-2 and implements FERC Staff Modification, Bullet 3.

Potential Impact 3.2-15

The State Water Board finds that short-term increases in inorganic and organic contaminants from hazardous materials associated with construction and restoration in the Hydroelectric Reach and Middle Klamath River immediately downstream of Iron Gate Dam is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The Proposed Project will involve an array of pre-construction, construction, and restoration activities that involve various degrees of disturbance of ground in the project location, which raises the potential for movement of potentially-contaminated sediment or soils into the Klamath River. The Proposed Project also involves the use of heavy construction equipment and vehicles, which raises the potential that gasoline, oil, or other materials will be spilled or wash into the Klamath River. While the Proposed Project includes BMPs, the BMPs are not specified for all project activities with the potential to discharge to surface waters (e.g. for pre-construction and restoration work) and are not sufficiently comprehensive to avoid the potential impacts associated with those activities. The impact is thus considered potentially significant.

However, the EIR and EIS include mitigation measures that will reduce the potential impact to less than significant by lessening the potential for the impact to occur, and by providing, in the event the impact does occur, for responsive actions that will abate the impact. Mitigation Measure WQ-1 applies proposed construction BMPs that will prevent contamination of soil and water to all ground-disturbing activities that will occur within the Limits of Work under the Proposed Project, including ground-disturbing pre-construction and restoration activities. FERC EIS Bullet 2 provides further improvements to BMP planning. Mitigation Measure TER-1 establishes a minimum of a 20-foot buffer around delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would result in a significant environmental impact. As discussed in *Potential Impact 3.5-1,* this measure has been updated since

the EIR to specify that it does not apply to reservoir-dependent wetlands that are expected to lose their water source upon drawdown. Mitigation Measure HZ-1 requires submittal of a Final Hazardous Materials Management Plan (Final Hazardous Materials Management Plan) to the State Water Board Deputy Director for review and approval no later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities. This measure also requires the Final Hazardous Materials Management Plan to include any modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff that provide the same or better level of protection regarding procedures for proper disposal or abatement of hazardous materials encountered during Proposed Project activities; proper storage, containment, and response to spills caused by the Proposed Project; and proper removal and disposal of septic tanks as part of the Proposed Project. The KRRC has finalized a Hazardous Materials Management Plan, which is approved under Condition 12 of the amended water quality certification. Additionally, FERC-Staff Modification, Bullet 5 has been added to the requirements for a Final Hazardous Materials Management Plan to require consultation with Siskiyou County to address, as appropriate, concerns regarding the differences in the proposed plan from the county ordinances (see page 3-310). Condition 12 sets forth a process for the State Water Board to approve any such amendments.

Potential Impact 3.2-16

The State Water Board finds that the short-term impact to aquatic biota from herbicide application during restoration of the reservoir areas is potentially significant, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Restoration activities associated with the Proposed Project include seeding and planting of vegetation in the reservoir footprints to stabilize the surface and minimize erosion. During the restoration period it is possible that invasive plant species will grow within the restoration area. The Proposed Project includes an invasive exotic management plan to control the growth of such species, and as a last resort the invasive exotic management plan allows for the application of herbicides to control growth of unwanted vegetation. Application of herbicides in the reservoir footprints raises the potential for herbicide to run off into the Klamath River, which could adversely affect aquatic species. Although the KRRC has proposed strategies to reduce the impact, those strategies are not sufficiently specific to address the potential for short-term aquatic toxicity within the Hydroelectric Reach during reservoir restoration activities, and so the impact is considered to be potentially significant.

Implementation of Mitigation Measure WQ-4 will avoid significant water quality impacts resulting from the application of herbicides in connection with restoration activities. The measure requires that herbicides used in connection with restoration sites be

appropriate for use near aquatic environments and includes requirements for application of herbicides that will reduce the potential for herbicide to reach the Klamath River in a manner that will pose risks of significant toxicity to aquatic species. Condition 9 of the water quality certification implements Mitigation Measure WQ-4. The FEIS does not consider additional alternatives or mitigation measures to address herbicide use.

Potential Impact 3.2-17 (short term for water temperature and dissolved oxygen in Fall Creek downstream of Fall Creek hatchery)

The State Water Board finds that the effect of Fall Creek Hatchery operations on water temperature and dissolved oxygen would be a significant environmental impact over the short term (eight years beginning with dam removal year 2), and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The Proposed Project includes restarting production at Fall Creek Hatchery. Production at Fall Creek Hatchery would increase from zero under existing conditions to 75,000 coho yearlings, 250,000 Chinook yearlings, and up to 3 million Chinook smolts with the Proposed Project. Fall Creek Hatchery is located on and discharges water to Fall Creek. At the production level examined in the EIR, Fall Creek Hatchery discharges are expected to alter water temperature from -0.5ºF to 2.2ºF: the State Water Board notes that these production levels have increased at Fall Creek Hatchery (while overall hatchery-production numbers have decreased) since the EIR was released. Fall Creek Hatchery will operate under an individual hatchery permit to ensure water quality protections are incorporated to the extent feasible. The Thermal Plan standard for COLD interstate waters requires no increase in temperature from existing conditions. Without mitigation, this results in significant potential for the discharges to result in exceedances of water quality standards for water temperature, which would be a significant impact even though any increase in temperature is projected to be numerically small and intermittent. The Fall Creek Hatchery discharges may also cause reductions in levels of dissolved oxygen in the receiving waters. While the potential for this to occur is low, even infrequent reductions of dissolved oxygen below Basin Plan objectives is deemed a significant impact.

The EIR considered several measures that might avoid significant impacts to water temperature resulting from Fall Creek Hatchery production, including “replumbing” the discharge system to prevent warming of the discharge water. However, this measure was deemed infeasible due to the presence of prolific tribal resources in the vicinity of Fall Creek Hatchery that could make a replumbing unworkable and uncertainties regarding potentially excessive costs. The use of chillers to reduce the temperature of discharged water was also considered, but found to be infeasible due to cost concerns in light of the temporary operations of the hatchery.

With respect to dissolved oxygen, the EIR notes that hatcheries manage dissolved oxygen concentrations for fish using flow control, passive aeration devices, and mechanical aeration. It is anticipated that these measures will for the most part prevent

reductions of dissolved oxygen concentrations in Fall Creek below Basin Plan objectives, but it is not certain that these measures will feasibly avoid the impact in every case, so there remains potential for the Proposed Project to significantly affect dissolved oxygen in Fall Creek.

The EIR examined a No Hatchery Alternative that would eliminate the potential for the dissolved oxygen and temperature impacts on Fall Creek. However, because the No Hatchery Alternative would increase the risk of a significant reduction in fish available for tribal harvest in the short term, it would result in a potentially significant short-term impact on the Klamath Riverscape as a tribal cultural resource (Potential Impact 3.12-9). Additionally, the No Hatchery Alternative would not as readily achieve the restoration purpose of the Proposed Project. One of the environmental objectives of the proposed Project is to *timely* "advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation." Relative to the Proposed Project, the No Hatchery Alternative would reduce the anticipated rate of reintroduction of coho and Fall Run Chinook salmon – delaying benefits to both of these populations, to the associated commercial, recreational and tribal fisheries, as well as to the larger ecosystem that benefits from the anadromous fish population. Additionally, the No Hatchery Alternative would reduce the near-term resiliency of these populations to environmental disturbance or other threats in the near term, as compared to the Proposed Project's maintaining of the hatcheries.

Further, it is worth noting that the coho salmon hatchery – which depends on the year-round access to cold water not available at Iron Gate Hatchery -- has been deemed necessary to protect the remaining genetic resources of the Upper Klamath River Population unit (PacifiCorp and CDFW 2014).

Because avoiding the Fall Creek impacts by adopting the No Hatchery Alternative would result in different significant impacts and in less comprehensive achievement of the Proposed Project's restoration purpose, the alternative is not a feasible means to avoid the water quality impacts, and the State Water Board declines to require the No Hatchery Alternative as a means to avoid the water quality impacts on Fall Creek. The FEIS does not evaluate additional alternatives or measures specific to hatchery operations.

In summary, for the reasons described above, specific technological, social, legal, economic and other considerations make the mitigation measures and project alternatives identified in the EIR infeasible.

Potential Impact 3.2-18

The State Water Board finds that construction activities on Parcel B lands would have potentially significant impacts, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impacts to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that as part of the Proposed Project, Parcel B lands would be transferred to the California, Oregon, or to a designated third-party transferee following dam removal. While the uses to which the Parcel B lands will be put post-transfer are not known with certainty at this time, since adoption of the EIR, the Proposed Project has developed recreation and restoration plans under which there would be some construction on the lands for recreation facilities, active restoration, fencing, trail-building, or other land management activities. As described under *Potential Impact 3.2-4* and *Potential Impact 3.2-15* above, construction often involves activities that could significantly affect water quality by causing sediment or construction-related contaminants to wash into bodies of water. However, as also described above, best management practices can reduce such impacts and here, implementation of Mitigation Measures WQ-1, TER-1, and HZ-1, and FERC EIS Bullet 2, and their incorporation into the Reservoir Management Plan, the Terrestrial Resources Management Plan, and Condition 10, would reduce the impacts to less than significant.

The EIS also notes that management of Parcel B lands after transfer of the property to the state or third-party transferees would be subject to applicable state and local guidelines and regulations. (EIS, page 3-450.)

Statement of Overriding Considerations

Potential Impact 3.2-3 (short term)

Removal of the Lower Klamath Project dams under the Proposed Project will result in the release of reservoir sediments that are currently trapped behind the dams into the Klamath River. As water is released from the reservoirs to draw them down before deconstruction of the dams, it will carry accumulated sediment down the Klamath River. And even after drawdown is complete, remaining expose sediment could be washed into the Klamath River until stabilization work is completed, especially during storm events. As a result, suspended sediment concentrations will reach levels that can cause significant adverse impacts to salmonids and exceed water quality objectives. The effects of sediment releases will extend as far as the Pacific Ocean, as the duration of events of elevated suspended sediment concentrations would be greater than currently occurs. However, the adverse effect of the sediment release will occur over a short term. Suspended sediment concentrations will return to background levels by the end of the second year after dam removal, and the most severe increases in sediment concentrations are expected to occur only in the first months after dam removal, although there is potential for some spikes to occur later (but still before the end of the two-year period following removal). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increases in suspended sediment concentrations to levels that are harmful to salmonids.

The Proposed Project will have several beneficial effects on water quality. Over the short term and the long term, in the Hydroelectric Reach and the Middle Klamath River

to the confluence of the Salmon River, the Proposed Project will result in increases in spring water temperatures and diel temperature variation, and decreases in late summer/fall water temperatures. These changes are expected to result in earlier fry emergence and better growth and migration conditions for anadromous fish, while moving the river towards compliance with temperature TMDLs and potentially offsetting the anticipated effects of climate change. Removing the Lower Klamath Project dams will eliminate seasonal releases of dissolved nutrients that build up in the reservoirs, which is expected to reduce the amount of total nitrogen and total phosphorous that enters the Klamath River on an annual basis. Because the Proposed Project will result in increases in dissolved oxygen levels in the Hydroelectric Reach and Middle Klamath River immediately downstream of Iron Gate Dam during summer and fall, it will eliminate existing extremes in dissolved oxygen that occur in those reaches in the summer and fall. Converting the Klamath River to more natural riverine conditions will change habitat for organisms that affect pH levels in the River, which will result in decreases in high daily pH peaks that currently occur during the summertime and better achieve compliance with pH objectives. And since removal of the dams would eliminate much of the slow-moving reservoir environment that contributes to high levels of phytoplankton and toxin-producing blue-green algae, implementation of the Proposed Project will cause reductions in chlorophyll-a and algal toxins in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary. These water quality benefits of the Proposed Project will help achieve the project objectives of improving long-term water quality conditions in the Klamath River, advancing the long-term restoration of natural fish populations in the Klamath Basin, and ameliorating conditions that contribute to high disease rates among Klamath River salmonids.

The short- and long-term benefits of the Proposed Project with respect to water quality support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impact of increases in suspended sediments due to the release of sediments currently trapped behind the Lower Klamath Project dams.

Potential Impact 3.2-9 (short term in the Hydroelectric Reach and Middle Klamath River from Iron Gate Dam to the Salmon River) and EIS p. 3-101

Resuspension of reservoir sediment deposits that will occur with the Proposed Project is likely to reduce oxygen concentrations in downstream reaches of the Klamath River over the short term (primarily during reservoir drawdown). It is anticipated that these reductions will be large enough to substantially exacerbate the existing exceedance of the water quality standard for the Klamath River. Low levels of dissolved oxygen can adversely affect survivability of aquatic species. As explained above, because the effect will result from release of sediments from the Lower Klamath Project dams, and it is not feasible to avoid the release of sediments, it is also not feasible to avoid the effect on dissolved oxygen concentrations in the Klamath River.

As stated above the Proposed Project will have several beneficial effects on water quality. Because over the long term the Proposed Project will result in increases in

dissolved oxygen levels in the Hydroelectric Reach and Middle Klamath River immediately downstream of Iron Gate Dam during summer and fall, it will eliminate existing extremes in dissolved oxygen that occur in those reaches in the summer and fall, which will improve conditions for aquatic species. In addition, over the short term and the long term in the Hydroelectric Reach and the Middle Klamath River to the confluence of the Salmon River the Proposed Project will result in increases in spring water temperatures and diel temperature variation, and decreases in late summer/fall water temperatures. These changes are expected to result in earlier fry emergence and better growth and migration conditions for anadromous fish, while moving the river towards compliance with temperature TMDLs and potentially offsetting the anticipated effects of climate change. Removing the Lower Klamath Project dams will eliminate seasonal releases of dissolved nutrients that build up in the reservoirs, which is expected to reduce the amount of total nitrogen and total phosphorous that enters the Klamath River on an annual basis. Converting the Klamath River to more natural riverine conditions will change habitat for organisms that affect pH levels in the River, which will result in decreases in high daily pH peaks that currently occur during the summertime and better achieve compliance with pH objectives. And since removal of the dams would eliminate much of the slow-moving reservoir environment that contributes to high levels of phytoplankton and toxin-producing blue-green algae, implementation of the Proposed Project will cause reductions in chlorophyll-a and algal toxins in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary. These water quality benefits of the Proposed Project will help achieve the project objectives of improving long-term water quality conditions in the Klamath River, advancing the long-term restoration of natural fish populations in the Klamath Basin, and ameliorating conditions that contribute to high disease rates among Klamath River salmonids.

The short- and long-term benefits of the Proposed Project with respect to water quality, and specifically the long-term benefits with respect to dissolved oxygen concentrations, support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impact of decreases in dissolved oxygen concentrations in the Klamath River due to the release of sediments currently trapped behind the Lower Klamath Project dams.

Potential Impact 3.2-17 (short term for water temperature and dissolved oxygen in Fall Creek downstream of Fall Creek hatchery)

Restarting operations at Fall Creek Hatchery will have a significant adverse effect on water temperatures and dissolved oxygen in Fall Creek downstream of the hatchery. These impacts are anticipated to occur, if at all, intermittently and only over the short term (defined for the purposes of the analysis of this impact to be eight years starting with dam removal year 2). However, the effects will be significant in that dissolved oxygen and temperature levels could violate the applicable water quality standards. More specifically, hatchery operations could result in the discharge of water that increases the temperature of Fall Creek, thus violating the COLD standard of the

Thermal plan, or that causes dissolved oxygen saturations in Fall Creek to fall below the objective set forth in the Basin Plan. As explained above, mitigation or avoidance of these potential impacts is not feasible.

As explained above, hatchery operations under the Proposed Project are expected to accelerate the rate of recolonization of new habitat made available by dam removal. This will accelerate the benefits to the populations of coho and fall-run Chinook salmon; the associated tribal, commercial and recreational fisheries; and the upstream ecosystem. Hatchery operation is also anticipated to increase the resilience of the system in the near term, and to provide needed support the coho population through the hatchery genetic management program.

In sum, although hatchery operations pose a risk of a significant and unavoidable environmental impact over the short term, they will ameliorate the potentially greater adverse impact of reduction of fish populations and associated impacts to the Klamath Riverscape over the period during the Klamath River will be most sensitive as a result of drawdown and removal activities and when the populations are in the preliminary stages of recolonization of new habitat and recovery from longstanding disease and water quality impacts that the dam removal is intended to address. This will provide both a short-term benefit (maintenance of higher population numbers throughout the post-removal period) and a long-term (putting populations in a better position to thrive once both the dams themselves and the short-term effects of their removal have eased) benefit to Klamath River fish and fish habitat. Moreover, the timely increase in fish populations, with particular emphasis on improving the commercial, tribal and recreational fisheries, is an objective of the restoration project. The short- and long-term benefits of the Proposed Project with respect to fish species in the Klamath River, including the short- and long-term benefits of the temporarily-continued hatchery operations, support the State Water Board's approval of the Proposed Project despite the potential short-term significant and unavoidable impact of dissolved oxygen and temperature levels in Fall Creek potentially violating applicable water quality standards.

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause several significant and unavoidable impacts to water quality, including short-term increases in suspended sediment concentrations and decreases in dissolved oxygen concentrations in the Klamath River, and dissolved oxygen and temperature levels in Fall Creek that could violate applicable water quality standards. These adverse effects on water quality have the potential to temporarily harm beneficial uses of the Klamath River and the fish species that rely on the River. The impacts cannot be mitigated or avoided.

The Proposed Project aims to restore the Klamath River to a more natural riverine condition, thus eliminating existing features that imperil fish species by altering natural flow and temperature regimes and create conditions in which fish diseases can flourish, in addition to blocking anadromous fish access to significant habitat. Over the long-

term, the Proposed Project will move the Klamath River closer to attainment of applicable water quality objectives and improve conditions for aquatic species. Accomplishing these goals requires actions that will temporarily produce significant adverse impacts. The State Water Board has determined that, individually and collectively, the significant and unavoidable water quality effects of the Proposed Project are outweighed by the water quality and other benefits of the Proposed Project described above, and are therefore acceptable.

Aquatic Resources

Overview

As noted above, the Proposed Project is a restoration project with an underlying purpose which includes timely water quality improvements related to the Lower Klamath Project and expansion of anadromous fish habitat. Objectives of the Proposed Project include improving natural fish populations, with emphasis on improving fisheries; ameliorating conditions underlying high disease rates among Klamath River salmonids; and improving the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River.

The EIR and EIS examine the potential effect of the Proposed Project on aquatic resources in the Klamath River. As discussed in detail in EIR Volume I Section 3.3 and EIS, Sections 3.4 and 3.6, the effects on long-term coho critical habitat (including Potential Impact 3.3-1 (long-term) and EIS 3-378 (long-term), Southern Resident DPS Killer Whale critical habitat (including Potential Impact 3.3-2), eulachon critical habitat (Including Potential Impact 3.3-3 (long term), long-term Pacific salmon (coho and Chinook salmon) essential fish habitat (including Potential Impact 3.3-4 (long-term)), groundfish and pelagic fish essential fish habitat (including Potential Impacts 3.3-5 and 3.3-6), long-term fall-run and spring-run Chinook and coho salmon populations, and steelhead, Pacific lamprey, shortnose sucker, Lost River sucker, and eulachon populations (including Potential Impacts 3.3-7 (short and long-term), 3.3-8 (short and long-term), 3.3-9 (short and long-term), 3.3-10 (short and long-term), 3.3-11 (short and long-term), and 3.3-13 (short and long term), 3.3-15 (short and long-term), green sturgeon, redband trout, longfin smelt[8] population (including Potential Impacts 3.3-12, 3.3-14, and 3.3-16), Potential Impacts 3.3-17 and 3.3-18[9], long-term benefits to certain[10] freshwater mussel species (including Potential Impact 3.3-19 (M. falcata, G.

[8] Not separately evaluated in EIS.
[9] The EIS did not separately evaluate these potential impacts concerning changes in interactions between species as a result of dam removal, although such interactions are evaluated and not found to be significant as to redband trout specifically. (See EIS, page lii.) Changes to the Proposed Project since adoption of the EIS are not anticipated to change such interactions.
[10] The FEIS does not separate this analysis into different species. (See EIS, page 3-232).

angulata, and freshwater clams, long term), Impacts to fish from changes in benthic macroinvertebrate availability (Potential Impact 3.3-20), Impacts from noise, construction and decommissioning other than impacts related to sediment release[11] (Potential Impacts 3.3-21 and 3.3-22), anadromous salmonid impacts from Fall Creek Hatchery diversions[12] (Potential Impact 3.3-24) will either not be significant or will be beneficial. Additionally, the EIS determined the Project would result in beneficial impacts to coho salmon, Chinook, steelhead, and Pacific lamprey through: providing additional access and cool-water refugia upstream of Iron Gate Dam, improving water temperature for anadromous fish life stages, increased gravel recruitment, reduced crowding, temperature stress, and pathogen densities (EIS 4-7); redband trout through additional food availability due to anadromous fry and juveniles being upstream of Iron Gate Dam (EIS 4-8); freshwater mussels through restoring connectivity for host fish species and increasing habitat (EIS 4-9); BMI through restoring connectivity and increasing habitat; Southern DPS green sturgeon and eulachon through restoration of more normative ecological processes (EIS 4-14); and bull trout through increased food availability due to anadromous fish fry and juveniles (EIS 4-17). Beneficial effects of the Proposed Project include long-term beneficial effects on coho salmon critical habitat quality and quantity; long-term beneficial effects on Chinook and coho salmon Essential Fish Habitat (EFH) quality and quantity; long-term beneficial effects on fall-run and spring-run Chinook salmon, coho salmon, steelhead, Pacific lamprey, and redband trout populations due to increased habitat quality and quantity; short-term and long-term beneficial effects on species interactions between introduced resident fish species and native aquatic species due to short- and long-term changes in habitat quality and quantity; increased habitat and host fish species connectivity benefiting freshwater mussels; and long-term beneficial effects on benthic macroinvertebrate habitat quality and diversity.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects to aquatic resources are set out below.

CEQA Findings

Potential Impact 3.3-1 and EIS page 3-378

The State Water Board finds that the Proposed Project would have a potentially significant effect on coho salmon critical habitat due to short-term sediment releases. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to

[11] The FEIS does not separately analyze this potential path of impacts on aquatic species.
[12] The FEIS does not separately analyze this potential path of impacts on anadromous salmonids.

mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that in the short term, under the Proposed Project, designated critical habitat supporting Southern Oregon/Northern California Coast (SONCC) coho salmon would be degraded from elevated suspended sediment concentrations (SSCs) and sediment deposition downstream of Iron Gate Dam (see Volume I Section 3.3.5.1 Suspended Sediment and Volume II Appendix E, and Volume I Section 3.3.5.2 Bed Elevation and Grain Size Distribution and Volume II Appendix F). Additionally, the EIS further describes the aquatic consequences of the SSC release, including specific discussion of the impact on coho salmon habitat. (See e.g. EIS Sections 3.4.3.3, 3.4.3.5, 3.4.3.7, 3.4.10, and 3.6.3.) The specific features of critical habitat and designated Primary Constituent Elements (PCEs) considered essential for the conservation of the SONCC Evolutionarily Significant Units (ESU) that would be adversely impacted in the short term include spawning substrate, water quality, physical or biological features, food availability, and safe passage conditions (EIR, page 3-289; EIS, page 3-378).

However, the Proposed Project includes the Tributary Mainstem Access Plan, the Spawning Habitat Availability Report and Plan, Reservoir Area Management Plan and the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, which include measures to reduce the short-term effects of SSCs on coho salmon PCEs of critical habitat. These plans include the provisions of aquatic resource measures AR-1 (Mainstem Spawning) and AR-2 (Juvenile Outmigration) as well as the requirements mitigation measures AQR-1 and AQR-2 (described below), that were evaluated in the EIR and are incorporated into Condition 6 of the water quality certification. These mitigation measures increase the certainty of the effectiveness of the aquatic resource measures AR-1 and AR-2 and reduce the short-term significant adverse impacts of the Proposed Project on coho salmon critical habitat.

Mitigation Measure AQR-1 − Mainstem Spawning

Implementation of Action 1 of proposed Aquatic Resource Measure AR-1 (tributary-mainstem connectivity) shall be implemented in the tributaries identified in Action 1 of AR-1, as well as all newly created stream channels that were previously inundated by Project reservoirs prior to drawdown. As described in Volume II Appendix B: Definite Plan − Appendix I, implementation of Action 1 of proposed Aquatic Resource Measure AR-1 would be conducted for at least two years following dam removal, including following a 5-year flow event if the event were to occur within that two years. This mitigation measure (AQR-1) ensures that in addition to the monitoring that shall be conducted as described for AR-1, monitoring shall also be conducted within one month following a 5-year flow event regardless of how many years since dam removal have passed, and if fish passage obstructions are identified, they shall be removed as described in AR-1 (Volume II Appendix B: Definite Plan − Appendix I). In addition, implementation of Action 1 of proposed Aquatic Resource Measure AR-1 shall include

an evaluation and proposal of other actions to improve spawning and rearing habitat in tributaries to the Klamath River that meet the spawning targets identified in AR-1, which may include: installation of large woody material, riparian planting for shade coverage, wetland construction or enhancement, and cattle exclusion fencing (EIR, pages 3-291 – 3-292).

Mitigation Measure AQR-2 − Juvenile Outmigration

Implementation of Action 2 of proposed Aquatic Resource Measure AR-2 (tributary-mainstem connectivity monitoring) shall be implemented in the tributaries identified in Action 2 of AR-2 as well as all newly created stream channels that were previously inundated by Lower Klamath Project reservoirs prior to drawdown. As described in Volume II Appendix B: Definite Plan − Appendix I, implementation of Action 2 of AR-2 would be conducted for at least two years following dam removal, including following a 5-year flow event, if the event were to occur within that two years. This mitigation measure (AQR-2) ensures that in addition to monitoring described under AR-2, monitoring shall also be conducted within one month following a 5-year flow event regardless of how many years since dam removal have passed, and requires that if fish passage obstructions are identified in relation to the Proposed Project, they shall be removed as described in AR-2 (Volume II Appendix B: Definite Plan − Appendix I) (EIR, page 3-392).

Analysis of potential alternatives to the Proposed Project shows that any of the alternatives that involves dam removal or significant construction (i.e., Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal) could also result in a significant short-term effect to coho salmon critical habitat quality and quantity due to short-term sediment releases. These alternatives would also result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project and No Action alternatives would not impact coho habitat because these alternatives would not release sediment. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these three alternatives are not environmentally superior.

Despite the measures incorporated into and required for the Proposed Project, because of the increased sediment exposure of coho salmon redds and juveniles, the impact to coho critical habitat is a significant and unavoidable adverse effect. (EIS, page 3-378).

Potential Impact 3.3-3 and EIS pages 3-381 to 3-383

The State Water Board finds that the Proposed Project would result in potentially significant effects on Southern DPS eulachon critical habitat in the short term, and that it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described in the EIS, pages 3-381 to 3-383, under a most-severe impact year scenario, suspended sediment concentrations in Southern DPS eulachon critical habitat during drawdown would be significantly higher than existing conditions, with potential impacts to adult eulachon during migration and spawning, as well as to eggs and larval eulachon. Additionally, increased suspended sediment concentrations may also cause short-term alterations in the spawning and incubation substrate.

As discussed above for *Potential Impact 3.2-3 and EIS page 3-86,* alternatives or mitigation measures to sediment release are not feasible. No alternatives or mitigation measures specific to eulachon have been identified.

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to Southern DPS eulachon critical habitat quality and quantity due to short-term sediment releases. These alternatives would also result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, as such these alternatives are not environmentally superior.

The No Project, No Action, and Continued Operations with Fish Passage alternatives would not impact Southern DPS eulachon habitat because these alternatives would not remove Iron Gate Dam, or would provide fish passage only designed for anadromous salmonids. Additionally, these alternatives would not have the same degree of benefit (or in the case of the No Project and No Action alternatives, none of the benefits) of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. Given the above, these alternatives are not environmentally superior.

Potential Impact 3.3-4 and EIS, page 3-247

The State Water Board finds that the Proposed Project would result in potentially significant effects on Pacific salmon (Chinook and coho salmon) Essential Fish Habitat (EFH) quality and quantity due to short-term sediment releases due to dam removal. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that in the short term, under the Proposed Project, Chinook and coho salmon EFH is identical for both species and would be degraded from elevated SSCs and sediment deposition downstream of Iron Gate Dam (see Volume I Section 3.3.5.1

Suspended Sediment and Volume II Appendix E, and Volume I Section 3.3.5.2 Bed Elevation and Grain Size Distribution and Volume II Appendix F). The EIS evaluates Pacific salmon EFH without specifying the Klamath River species. The specific features of EFH that would be adversely impacted in the short term include water quality (including elevated SSCs and lowered DO concentrations), reduced food availability, and reduced pool availability necessary for successful adult migration and holding, spawning, egg-to-fry survival, fry rearing, smolt migration, and estuarine rearing of juvenile Chinook and coho salmon (EIR, page 3-294; EIS, page 3-247).

Based on the wide distribution and use of tributaries by both juvenile and adult Chinook and coho salmon, implementation of the KRRC's proposed aquatic resource measures and implementation of mitigation measures (AQR-1 and AQR-2) described above in Potential Impact 3.2-1, would substantially decrease the effects on Pacific salmon EFH in the short term.

As discussed above for *Potential Impact 3.2-3 and EIS page 3-86,* alternatives or mitigation measures to sediment release are not feasible or would fail to provide a comparable level of environmental benefits as the Proposed Project. NMFS has provided no additional conservation recommendations, based on the assessment that the proposed action already contains adequate measures to avoid or minimize short-term, adverse effects. (See EIS, page 3-247.)

Despite the measures incorporated into and required for the Proposed Project, significant temporary adverse effects on Pacific salmon EFH remain. (EIS, page 3-247.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to Pacific salmon (Chinook and coho) Essential Fish Habitat due to short-term sediment releases. These alternatives would also result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project, No Action alternatives would not impact Pacific salmon Essential Fish Habitat because these alternatives would not remove or provide passage at Iron Gate Dam. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would have a reduced impact on Chinook and coho Essential Fish Habitat, because of reduced sediment discharges, but would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these three alternatives are not environmentally superior.

EIS Section 3.4.3.3, Fall-run Chinook, page 3-224

The State Water Board finds that the Proposed Project would have a potentially significant effect on fall run Chinook salmon migrating and spawning in the mainstem Klamath River due to short-term sediment releases. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Specifically, the EIS found:

- Sediment deposition in spawning areas of the Klamath River would result in the complete loss of those fall-run Chinook redds and eggs in the drawdown year; and
- High SSCs would cause moderate to major physiological stress in adult and juvenile fall-run Chinook migrating in the Klamath River during the drawdown year.

As described in Potential Impact 3.3-1 and EIS 3-378 (above), the Proposed Project includes the Tributary Mainstem Access Plan, and the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, which include measures to reduce the short-term effects of SSCs on chinook salmon, including the spawning, migration and rearing lifestages.

Despite the substantial reduction in harm to fall-run chinook salmon these measures provide, in light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on fall-run chinook salmon spawning and migrating in the Lower Klamath River in the short term (i.e. during the drawdown year). (EIS, page 3-224.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to fall-run Chinook salmon due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project, No Action alternatives would not impact fall-run Chinook salmon because these alternatives would not release sediment. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would have a reduced impact on Chinook and coho Essential Fish Habitat, because of reduced sediment discharges, but would result in significantly fewer benefits for environmental resources than the Proposed Project

and would not go as far towards meeting the project's restoration purpose and objectives, and so these three alternatives are not environmentally superior.

EIS, Section 3.4.3.8, page 3-243

The State Water Board finds that the Proposed Project would have a significant effect on the number of hatchery fall-run Chinook salmon produced in the Klamath River Basin. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The Proposed Project's Hatcheries Management and Operations Plan includes continued hatchery operation for eight years after dam removal. Since adoption of the EIR in 2020, the Proposed Project has changed to reduce the number of fall-run Chinook anticipated to be produced for the eight-year period following dam removal. Under the Proposed Project, the California Department of Fish and Wildlife (CDFW) will operate the Fall Creek Hatchery under a lease from PacifiCorp for a period of eight years, unless otherwise determined under the measures discussed below. The Proposed Project would not fund hatchery production after the end of eight years. This will likely result in two phases of reduction of hatchery-produced fall-run Chinook and Coho. Specifically, the EIS found:

- If hatchery production at Fall Creek is terminated in the future, the elimination of hatchery-produced fall-run Chinook and coho salmon would likely result in a reduction in adult returns in post-dam removal years for an indeterminate period of potentially 1 to 10 years (i.e., short term) before the benefits of dam removal are realized.

Reasonable and Prudent Measure 6 of the NMFS's Biological Opinion for surrender and decommissioning of the Lower Klamath Project, tracking and adaptive management of Chinook production goals is required, and information gathered shall be used to inform adaptive management of the hatchery for eight years after dam removal, as well as a recommendation regarding the disposition of the hatchery thereafter. (See EIS, Section 2.2.3.) CDFW will implement this term and will coordinate with NMFS, Oregon DFW, Tribes and commercial fishing interests in assessing the need to continue raising fish at Fall Creek Hatchery during the eight years following dam removal and thereafter. (EIS, page 3-242.) As stated in FERC's EIS page 3-243, California Department of Fish and Wildlife has committed to implement this adaptive management measure, and this would mitigate the effects of closure.

Despite the substantial reduction in harm to fall-run chinook salmon these measures provide, in light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on hatchery-produced fall-run Chinook salmon. (EIS, page 3-243.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, Three Dam Removal, and Two Dam Removal alternatives would also result in a significant impact to hatchery fall-run Chinook salmon as they would all eliminate Iron Gate facilities (and therefore the feasible operation of Iron Gate Hatchery), and continued hatchery production would be under the same constraints as the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. The No Hatchery Alternative would result in significantly greater impacts to hatchery fall-run Chinook salmon as it did not include hatchery production.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not impact hatchery fall-run Chinook salmon because these alternatives would not impact hatchery operations. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. The No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

EIS, page 3-225

The State Water Board finds that the Proposed Project would have a potentially significant, adverse, and unavoidable effect on spring-run Chinook salmon migration lifestages due to short-term sediment releases. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Specifically, the EIS found:

- Juvenile spring-run Chinook salmon mainly rear in tributaries, however, SSCs encountered during their outmigration in the mainstem Klamath River would likely result in short-term stress and reduce growth rates, though these fish would suffer little or no mortality.
- Adult migrating spring-run Chinook salmon could experience minor to major physiological stress, under the slightly elevated SSC's under the Proposed Project.

However, as described in *Potential Impact 3.3-1 and EIS 3-378* (above), the Proposed Project includes the Tributary Mainstem Connectivity Plan, and the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, which include measures to reduce the short-term effects of SSCs on chinook salmon, including the spawning, migration and rearing lifestages.

Despite the substantial reduction in harm to spring-run chinook salmon these measures provide, in light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on spring-run chinook salmon migration in the short term (i.e. during the drawdown year). (EIS, page 3-225.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives would also result in significant short-term sediment releases: these alternatives would not provide a meaningful change in the impact of sediments on Spring-Run Chinook migration Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project, No Action, and Continued Operations with Fish Passage alternatives would not impact spring-run Chinook salmon because these alternatives would not release sediments retained behind the dams. The No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

EIS, page 3-227

The State Water Board finds that the Proposed Project would have a potentially significant effect on coho salmon spawning, rearing and migration lifestages due to short-term sediment releases. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Specifically, the EIS found:

- Migration: Existing mortality for outmigrating coho salmonids is between 35 and 70 percent. In the short-term, with increased sediments from implementation of the Proposed Project, mortality is expected to be increase over this high percentage.
- Spawning: Existing mortality for Klamath River mainstem spawning coho salmon is between 20 and 60 percent. In the short-term, with increased sediments from implementation of the Proposed Project, mortality is expected to be between 60 – 80 percent.
- Rearing: Existing mortality for rearing coho in the Klamath River is between 20 and 40 percent. In the short-term, with increased sediments from implementation

of the Proposed Project, mortality is expected to be slightly above existing conditions in the worst case scenarios for fish.

However, as described in *Potential Impact 3.3-1*, above, the Proposed Project includes the Tributary Mainstem Access Plan, and the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, which include measures to reduce the short-term effects of SSCs on coho salmon, including the spawning, migration and rearing lifestages.

Despite the substantial reduction in harm to coho salmon these measures provide, in light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on coho salmon spawning, rearing and migrating in the Lower Klamath River in the short term (i.e. during the drawdown year). (EIS, page 3-227.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to coho salmon lifestages due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, as such these alternative are not environmentally superior.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not impact coho salmon life stages because these alternatives would not release sediment from behind the dams. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

EIS, page 3-229 - Steelhead

The State Water Board finds that the Proposed Project would have a potentially significant effect on the steelhead lifestages of juvenile and adult migration due to short-term sediment releases. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIS analyzed steelhead impacts by lifestages (e.g., migration, spawning, rearing, etc.) and determined that:

- Post-spawning adult steelhead migrating downstream in the spring to return to the ocean (typically April through May) would experience higher SSCs than existing condition which would result in major, but sublethal stress to individuals.

- Juvenile steelhead rearing in the mainstem Klamath River would experience higher SSCs than existing condition which would result in major physiological stress.

However, as described in *Potential Impact 3.3-1* (above), the Proposed Project includes the Tributary Mainstem Access Plan, and the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, which include measures to reduce the short-term effects of SSCs on steelhead migration.

Despite the substantial reduction in harm to steelhead these measures provide, in light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on steelhead adult and juvenile migration in the Lower Klamath River in the short term (i.e. during the drawdown year). (EIS, page 3-229.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to steelhead migration lifestages due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not have a significant impact steelhead lifestages because these alternatives would not release sediment behind the dams. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

EIS, page 3-229 – Pacific Lamprey

The State Water Board finds that the Proposed Project would have a potentially significant effect on a small portion of Pacific lamprey year classes in the Klamath Basin due to short-term sediment releases. It is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Specifically, the EIS found that juvenile Pacific lamprey rear for a variable number of years before outmigrating to the ocean, and that outmigration continues year-round, with peaks in late spring and fall. At these peak times, SSC exposure is expected to be slightly higher than under existing conditions. As a result, SSCs resulting from the Proposed Project could affect a small portion of multiple year-classes of the population.

In light of the degree of sediment release and its timing, there will be a significant, unavoidable effect on a small portion of Pacific lamprey year classes in the Klamath Basin due to short-term sediment releases. (EIS, page 3-229.)

At the time of the EIR's release, an aquatic resource measure, the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, was proposed that included measures to identify and relocate both salmonids and lamprey at time of peak SSC releases. Since then, during finalization of the Juvenile Salmonid and Pacific Lamprey Rescue and Relocation Plan, the Aquatic Technical Work Group (comprised of California Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, National Marine Fisheries Service, United State Fish and Wildlife Service, State Water Board, Bureau of Land Management, and the Yurok and Karuk Tribes) determined that lamprey relocation was both ineffective in addressing potential impacts to outmigration and unnecessary. The Aquatic Technical Work Group instead proposed that lamprey would be allowed to volitionally outmigrate.

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to a small portion of Pacific lamprey year classes due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not have a significant impact on this small portion of lamprey year-classes because these alternatives would not release sediment behind the dams. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

Potential Impact 3.3-13 and EIS, page 3-385

The State Water Board finds that the Proposed Project would have a potentially significant effect on Lost River and shortnose suckers due to dam removal and the related elimination of reservoir habitat. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The Proposed Projected is anticipated to result in the loss of approximately 9 percent of the Lost River and shortnose sucker adult population in the Upper Klamath Lake Recovery Unit, which is approximately 5 percent of the estimated range-wide adult population (including fish losses in both Oregon and California). Because sucker spawning does not occur below Upper Klamath Lake, this loss is not anticipated to affect long-term population or recovery.

However, as described in EIR Potential Impact 3.3-13 and FERC EIS page 3-384, the Proposed Project includes sucker salvage and translocation efforts in the spring prior to reservoir drawdown (this is implementation of aquatic resource measure AR-6, now under the Aquatic Resources Management Plan). The Proposed Project's sucker salvage and translocation efforts estimate that approximately 600 suckers can be captured from Project reservoirs (half from J.C. Boyle and half from Copco No. 1 and Iron Gate reservoirs) and translocated to either the Klamath National Fish Hatchery, the Klamath Tribes' sucker rearing facility each of Chiloquin, Oregon, or to the Tule Lake national Wildlife Refuge.

Despite the substantial reduction in harm to Lost River and shortnose suckers the measure provides, in light of their reservoir habitat removal, there will be a significant, unavoidable effect on Lost River and shortnose suckers in the short term. (EIS, page 3-385.)

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to a small portion of Lost River and shortnose suckers due to the loss of habitat, although the habitat in J.C. Boyle would remain under the Two- and Three-Dam Removal alternatives. These alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project, No Action, and Continued Operations with Fish Passage alternatives would not impact Lost River and shortnose suckers because these alternatives would not disturb their habitats through dam removal or release of sediment. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

Potential Impact 3.3-15 and EIS, pages 3-381 to 3-382

The State Water Board finds that the Proposed Project would result in potentially significant effects on Southern DPS eulachon in the short term, and that it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described in the EIS, pages 3-381 to 3-383, under a most-severe impact year scenario, suspended sediment concentrations in the lower Klamath reaches during drawdown would be significantly higher than existing conditions, with potential impacts to adult eulachon during migration and spawning, as well as to eggs and larval eulachon. Additionally, increased suspended sediment concentrations may also cause

short-term alterations in the spawning and incubation substrate, which could cause further harm to the species.

As discussed above for *Potential Impact 3.2-3 and EIS page 3-86,* alternatives or mitigation measures to sediment release are not feasible. No alternatives or mitigation measures specific to eulachon have been identified.

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to Southern DPS eulachon due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not have a significant impact Southern DPS eulachon because these alternatives would not release sediment behind the dams. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

Potential Impact 3.3-19 (short term, and long term for Anodonta spp.) and EIS, page 3-232 (freshwater mussels)

The State Water Board finds that the Proposed Project would result in a significant short-term effect on freshwater mussels, and particularly to the native *Anodonta spp.* due to elevated SSCs during reservoir drawdown, localized sediment deposition, in-river construction activities and, for *Anodonta ssp.,* long-term impacts due to elimination of reservoir habitat in the Hydroelectric Reach and relatively stable flow regime in the Middle Klamath River immediately downstream of Iron Gate Dam. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described at EIS, page 3-232, mortality among freshwater mussels is expected in the short-term due to high SSCs during reservoir drawdown. Short-term mortality is expected to be high in the areas of high sediment deposition between Iron Gate Dam and Cottonwood Creek. *Id.* Further, additional mortality events due to in-stream construction are also anticipated in the short term. *Id.*

Anodonta spp. would likely be particularly impacted by the Proposed Project due to their close proximity to Iron Gate Dam, and preference for stable flows that currently exist in Lower Klamath Project reservoirs and downstream of Iron Gate Dam. *Anodonta spp.* likely only occurs downstream of Iron Gate Dam under existing conditions as a result of the altered hydrograph (Davis et al. 2013). Under natural conditions they would be

unlikely to occur in the mainstem Klamath River. Based on their limited distribution in the mainstem Klamath River, Lower Klamath Project reservoirs, and small presence in the Upper Shasta River, *Anodonta spp.* would likely decline substantially in abundance within the first six months of dam removal as a result of suspended sediment releases. In addition, their habitat would likely substantially decline in quality in the short term. Based on predicted substantial short-term decrease in *Anodonta spp.* abundance of a year class, and substantial decrease in habitat quality, there would be a significant effect to the *Anodonta spp.* population under the Proposed Project in the short term (EIR, page 3-345). The population would be unlikely to re-establish.

Aquatic resource measure AR-7, which would have relocated *Anodonta ssp* from below the Iron Gate Dam area was evaluated and found unlikely to off-set impacts to *Anodonta spp*. The areas downstream of the Trinity River confluence planned for relocation do not currently support *Anodonta spp.* and are unlikely to in the future (Davis et al. 2013) (EIR, page 3-345). The KRRC has removed AR-7 from its proposal since adoption of the EIR, and the Proposed Project with (FERC) Staff Modification in the final EIS does not recommend mussel relocation.

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal and No Hatchery alternatives could also result in a significant short-term effect to the *Anodonta spp.* population due to sediment releases and habitat modifications associated with removal of the Iron Gate Dam. Under the Two Dam Removal and Three Dam Removal alternatives, *Anodonta spp*. could be salvaged from the reach downstream of Iron Gate Dam and relocated to J.C. Boyle Reservoir, which does support suitable *Anodonta spp*. habitat. Therefore, with aquatic resource measure AR-7, there would likely not be a substantial reduction in the abundance of *Anodonta spp*. species in the short term, and impacts would be not significant with for *Anodonta spp*. in the short term for these two alternatives. However, Two Dam Removal and Three Dam Removal alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these two alternatives are not environmentally superior.

The No Project, No Action and Continued Operations with Fish Passage alternatives would not impact the *Anodonta spp.* population because these alternatives would not remove the Iron Gate Dam. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these three alternatives are not environmentally superior.

EIS page 3-232 – BMI

The State Water Board finds that the Proposed Project would have a potentially significant short-term effect on benthic macroinvertebrates (BMI) due to short-term sediment releases and that it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As discussed in the EIS, page 3-232, in the short term, the Proposed Project would likely result in a reduction in abundance of BMI in the Klamath River downstream of Iron Gate Dam to the confluence with the Salmon River, due to sediment deposition and channel morphology effects. However, BMI populations are expected to recover quickly because of the many courses for recolonization and their rapid dispersion through drift and aerial dispersal of adults. Full recovery of BMI communities is typically observed within a year follow disturbances.

No alternatives or mitigation measures specific to BMI has been identified. As discussed prior in *Potential Impact 3.2-3 and EIS page 3-86*, alternatives and mitigation measures to sediment release are not feasible.

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal, No Hatchery, Three Dam Removal, and Two Dam Removal alternatives could also result in a significant short-term effect to BMI due to short-term sediment releases. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, as such these alternative are not environmentally superior.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not significantly impact BMI because these alternatives would not release sediment. behind the dams. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives. Therefore, these alternatives are not environmentally superior.

EIS, pages 3-386 and 3-387

The State Water Board finds the Project would result in a significant long-term effect on bull trout from increased potential for predation on bull trout eggs and fry associated with anadromous fish reintroduction. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The State Water Board finds that while bull trout are likely to benefit from increased foraging opportunities through the introduction of chinook and steelhead in currently occupied bull trout habitat, this reintroduction is also likely to increase competition. This

competition includes the potential for increased predation by anadromous fish of bull trout eggs and fry.

The FWS (2021a) BiOp concurs with this determination and further concludes that the proposed action is not likely to jeopardize the continued existence of the bull trout, nor is it likely to destroy or adversely modify the species' designated critical habitat.

No alternatives or mitigation measures specific to bull trout has been identified.

Analysis of potential alternatives to the Proposed Project shows that the No Hatchery, Partial Removal, Three Dam Removal, Two Dam Removal, and Continued Operations with Fish Passage alternatives could also result in a significant long-term effect to bull trout due to these alternatives allowing anadromous fish to migrate past Iron Gate Dam. Additionally, these alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives.

The No Project and No Action alternatives would not impact bull trout because these alternatives would reintroduce anadromous fish above Iron Gate Dam. However, the No Project and No Action alternatives would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and objectives.

Statement of Overriding Considerations

Potential Impact 3.3-1 and EIS page 3-378

As indicated above, the Proposed Project would result in a short-term significant impact to coho critical habitat as a result of the Proposed Project's short-term sediment releases.

In assessing the severity of the significant impact to coho critical habitat, it is worth noting that these impacts do not indicate a significant impact on coho populations as a whole. (EIR, Potential Impact 3.3-9.) On August 29, 2022, the KRRC provided a report from Stillwater Sciences that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to coho populations remains a no significant impact under the criteria of the EIR.

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in coho salmon populations (EIR, Potential Impact 3.3-9; EIS 3-227), as it would open approximately 80 miles of additional habitat to coho within the Hydroelectric Reach. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to coho salmon.

Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The long-term coho benefits of the Proposed Project as described in the EIS and EIR, in addition to benefits in other resources areas support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact of sediment release on coho salmon critical habitat in the short term.

Potential Impact 3.3-3 and EIS pages 3-381 to 3-383

As indicated above, the Proposed Project would result in a short-term significant impact to Southern DPS eulachon critical habitat as a result of the Proposed Project's short-term sediment releases.

This impact would be short-term in duration while in the long-term, conditions in the Lower Klamath River and estuary are not expected to be substantially different from existing conditions. (EIS 3-382). Additionally, while the EIS found a significant impact on eulachon critical habitat, the EIR did not. This difference in how the environmental review documents analyzed eulachon critical habitat impacts indicates, that while there is a significant impact to eulachon critical habitat, this impact is not severe in its degree: rather it is close to the line between significant and not significant.

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short duration and low degree of severity of the impact, and the multiple environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term eulachon critical habitat.

Potential Impact 3.3-4 and EIS, page 3-247

As indicated above, the Proposed Project would result in a short-term significant impact to Pacific salmon (Chinook and coho salmon) Essential Fish Habitat as a result of the Proposed Project's short-term sediment releases.

In assessing the severity of the significant impact to Pacific salmon (Chinook and coho salmon) Essential Fish Habitat, it is worth noting that these impacts do not indicate a significant impact on coho or Chinook populations as a whole. (EIR, Potential Impacts 3.3-7, 3.3-8, 3.3-9) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to coho and Chinook populations remains a no significant impact under the criteria of the EIR

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in coho and Chinook salmon populations (EIR, Potential Impact 3.3-7, 3.3-8, 3.3-9 and EIS pages 3-225, 3-227), as it would open substantial additional habitat to Pacific salmon within and upstream of the Hydroelectric Reach. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to Pacific salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short duration of the sediment impact to Pacific salmon Essential Fish Habitat, together with the long-term Pacific salmon benefits of the Proposed Project, as well as the other environmental benefits described in the EIS and EIR, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term Pacific salmon (Chinook and coho salmon) Essential Fish Habitat.

EIS page 3-224

As indicated above, the Proposed Project would result in a short-term significant impact to fall-run Chinook salmon spawning and migration lifestages in the mainstem Klamath as a result of the Proposed Project's short-term sediment releases.

In assessing the severity of the significant impact fall-run Chinook salmon spawning and migration lifestages in the mainstem Klamath, it is worth noting that these impacts do not indicate a significant impact on Chinook salmon populations as a whole. (See EIR Potential Impact 3.3-7.) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and

determined that impacts to Chinook populations remains a no significant impact under the criteria in the EIR.

Removal of the Lower Klamath Project dams would also result in long-term beneficial increases in Chinook salmon populations (EIR, Potential Impact 3.3-7 and FERC EIS page 3-225), as it would open additional miles of habitat to Chinook salmon within and above the Hydroelectric Reach. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to Chinook salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short duration of the impact on the fall-run Chinook livestages of spawning and migration, the limitation of the impact to those fish in the mainstem Klamath River, the long-term Chinook salmon benefits of the Proposed Project, and the other environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term fall-run Chinook salmon spawning and migration lifestages in the mainstem Klamath River.

EIS page 3-243

As indicated above, the Proposed Project would result in a significant impact to hatchery fall-run Chinook salmon as a result of the Proposed Project's hatchery operations potentially ending after 8 years.

In assessing the severity of the significant impact hatchery fall-run Chinook salmon, it is worth noting that these impacts do not indicate a significant impact on Chinook salmon populations as a whole. (See EIR, Potential Impact 3.3-7.) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to Chinook populations remains a no significant impact. This indicates, that while there is a significant impact to hatchery fall-run Chinook salmon, impacts to Chinook salmon populations are not severe.

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in Chinook salmon populations (EIR, Potential Impact 3.3-7 and FERC EIS 3-225), as it would open additional miles of habitat to Chinook salmon within and above

the Hydroelectric Reach. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to Chinook salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The long-term Chinook salmon benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant impacts associated with hatchery fall-run Chinook salmon.

EIS page 3-225

As indicated above, the Proposed Project would result in a short-term significant unavoidable impact to spring-run Chinook salmon migration lifestages as a result of the Proposed Project's short-term sediment releases.

In assessing the severity of the significant impact fall-run Chinook salmon, it is worth noting that these impacts do not indicate a significant impact on Chinook salmon populations as a whole. (Potential Impact 3.3-8.) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to Chinook populations remains a no significant impact.

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in Chinook salmon populations (EIR, Potential Impact 3.3-7 and FERC EIS 3-225), as it would open additional miles of habitat to Chinook salmon within and above the Hydroelectric Reach. This includes the habitat preferentially used by Spring Run Chinook prior to the construction of fish-barrier dams. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to Chinook salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short-term nature of the impact on Spring-run Chinook migration, the long-term Chinook salmon habitat and population benefits of the Proposed Project, and the multiple environmental benefits as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term Spring-run Chinook salmon migration lifestages.

EIS page 3-227

As indicated above, the Proposed Project would result in a short-term significant and unavoidable impact to coho salmon spawning, rearing and migration lifestages as a result of the Proposed Project's sediment exports associated with drawdown activities.

In assessing the severity of the significant impact to the rearing, spawning and migration lifestages of coho, it is worth noting that these impacts do not indicate a significant impact on coho populations as a whole. (EIR Potential Impact 3.3-9) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to coho populations remains a no significant impact under the criteria for the EIR.

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in coho salmon populations (EIR, Potential Impact 3.3-9 and FERC EIS 3-227), as it would open approximately 80 miles of additional habitat to coho within the Hydroelectric Reach. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to coho salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short-term nature of the impact, the lack of population-level severity, the long-term coho benefits of the Proposed Project, and the other environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term coho salmon lifestages.

EIS page 3-229 – Steelhead

As indicated above, the Proposed Project would result in a short-term significant and unavoidable impact to steelhead lifestages of juvenile and adult migration as a result of the Proposed Project's sediment exports associated with drawdown activities.

In assessing the severity of the significant impact to steelhead lifestages, it is worth noting that these impacts do not indicate a significant impact on steelhead populations as a whole. (EIR, Potential Impact 3.3-10) On August 29, 2022, the KRRC provided a report that analyzed fish population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to steelhead populations remains a no significant impact.

Removal of the Lower Klamath Project dams would result long-term beneficial increases in steelhead populations (EIR, Potential Impact 3.3-10 and FERC EIS 3-229), as it would open hundreds of river miles of additional habitat to steelhead. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics. Dam removal would also support habitat complexity and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short-term nature of the impact, the lack of population-level severity, the long-term steelhead benefits of the Proposed Project, and the other environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term steelhead migration lifestage.

EIS page 3-229 – Pacific Lamprey

As indicated above, the Proposed Project would result in a short-term significant and unavoidable impact on a small portion of Pacific lamprey year-classes in the Klamath River Basin as a result of the Proposed Project's sediment exports associated with drawdown activities.

Removal of the Lower Klamath Project dams would result long-term beneficial increases in Pacific lamprey populations (EIR, Potential Impact 3.3-11 and FERC EIS page 3-229), as it would open additional habitat. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River. Additionally, the release of sediment from behind the dams in the long-term would

create more natural substrate characteristics. Dam removal would also support habitat complexity and allow fish to more widely disperse.

The Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

Though the EIR considered Pacific lamprey population as a whole, the short-term significant and unavoidable impacts to a small portion of Pacific lamprey year-classes do not change the no significant impact determination to Pacific lamprey population. On August 29, 2022, the KRRC provided a report that analyzed Pacific lamprey population impacts in relation to updated sediment transport model predictions associated with its refined drawdown schedule. The KRRC's report compared the results of this analysis to the Final EIR's aquatic resource significance criteria and determined that impacts to Pacific lamprey populations remains a no significant impact. This difference in how the environmental review documents analyzed Pacific lamprey impacts indicates, that while there is a significant impact to a small portion of Pacific lamprey in the short-term, impacts to Pacific lamprey populations are not severe.

The short term of the impact, the lack of population-level severity, the long-term Pacific lamprey benefits of the Proposed Project, and the range of other environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts.

Potential Impact 3.3-13 and EIS 3-385

As indicated above, the Proposed Project would result in significant impact to Lost River and shortnose suckers as a result of the Proposed Project's dam removal and elimination of reservoir habitat.

However, as stated in the EIS (3-385), USFWS does not consider the Lower Klamath Project reservoir populations and habitat below Keno Dam as contributing to sucker recovery with the exception of providing genetic broodstock. Despite these losses of reservoir habitat and individual fish, the Proposed Project would not affect any known spawning habitat for either species. The Lost River and shortnose sucker are not known to spawn in the hydroelectric reach reservoirs, or anywhere downstream of Upper Klamath Lake. Thus, they provide no contribution to future population growth at the range-wide scale. While their numbers and distribution would be somewhat reduced through the loss of the four dams and reservoirs, the Klamath River downstream of Keno Dam to Iron Gate Dam, including the hydroelectric reach, is considered a sink population,and reproduction by both species would not be affected by the proposed action.

Additionally, while the EIS found a significant impact on Lost River and shortnose suckers, the EIR did not. This difference in how the environmental review documents analyzed the impacts to Lost River and shortnose suckers indicates, that while there is a significant impact, this impact is not severe in its degree: rather it is close to the line between significant and not significant.Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The low degree of impact to the Lost River and shornose sucker populations as a whole and to future recovery efforts, and the overall environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated Lost River and shortnose suckers

Potential Impact 3.3-15 and EIS page 3-381

As indicated above, the Proposed Project would result in a short-term significant impact to Southern DPS eulachon as a result of the Proposed Project's short-term sediment releases.

While the EIS found a significant impact on eulachon in the short term, the EIR did not. This difference in how the environmental review documents analyzed eulachon impacts indicates, that while there is a significant impact to eulachon, this impact is not severe in its degree: rather it is close to the line between significant and not significant. Additionally, this impact would be short-term in duration while in the long-term, conditions in the Lower Klamath River and estuary are not expected to be substantially different from existing conditions (EIS 3-382).

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short-term nature of the eulachon impact, the low degree of severity of the impact, and long-term environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts habitation eulachon.

Potential Impact 3.3-19 and EIS page 3-232 (freshwater mussels)

As indicated above, the Proposed Project would result in a significant short-term effect on native freshwater mussels due to elevated SSCs during reservoir drawdown and long-term impacts due to elimination of reservoir habitat in the Hydroelectric Reach and relatively stable flow regime in the Middle Klamath River immediately downstream of Iron Gate Dam.

While the EIS found a significant impact on freshwater mussels in the short term, the EIR did not find a significant impact except on *Anondota ssp*. This difference in how the environmental review documents analyzed short-term freshwater mussel impacts indicates, that while there is a significant impact to other freshwater mussels, this impact is not severe in its degree: rather it is close to the line between significant and not significant.

Similarly, while the EIR found a long-term significant impact on *Anondota ssp*, the EIS did not find any long-term impacts on mussels: to the contrary, the EIS found that freshwater mussels would have a permanent and significant benefit from restored connectivity for fish host species. This difference indicates that the degree of impact is not severe in the context of the larger freshwater mussel population. As noted above, *Anondota, ssp* have likely established a population below Iron Gate Dam due to the altered hydrograph. Under natural conditions they would be unlikely to occur in the mainstem Klamath River.

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions.. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity. BMI would be able to recolonize the Klamath River from upstream areas and tributaries.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The context and degree of the impacts on freshwater mussels, long-term benefits of the Proposed Project on aquatic resources, and other environmental benefits of the Proposed Project as described in the EIS and EIR, support the State Water Board's approval of the Proposed Project despite the described significant and unavoidable impacts to freshwater mussels.

EIS page 3-232 (BMI)

As indicated above, the Proposed Project would result in a short-term significant impact to BMI as a result of the Proposed Project's short-term sediment releases.

However, this impact would be short-term in duration while in the long-term, Project implementation would assist in establishing a more natural river regime, resulting in a permanent, significant beneficial effect on BMI that will in turn benefit coho salmon and other freshwater fish. (See EIS, page 3-232.)

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity. BMI would be able to recolonize the Klamath River from upstream areas and tributaries.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short term of the impact, the long-term benefit to BMI, and the other environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term eulachon critical habitat.

EIS page 3-386 to 3-387

As indicated above, the Proposed Project would result in a significant long-term impact to bull trout from increases in potential predation on bull trout eggs and fry associated with anadromous fish reintroduction.

However, USFWS's Biological Opinion concludes that the proposed action is not likely to jeopardize the continued existence of the bull trout, nor is it likely to destroy or adversely modify the species' designated critical habitat. The FEIS further finds that bull trout are likely to benefit from increased foraging opportunities through the introduction of chinook and steelhead in currently occupied bull trout habitat. Additionally, current bull trout habitat is in upstream tributaries to the Upper Klamath Lake in Oregon, rather than in California.

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The limited nature of the impact, and the long-term environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts to bull trout.

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause significant and unmitigable impacts to aquatic resources as described abovein the short and long term. The Proposed Project aims to restore the Klamath River to a more natural riverine condition, with significant benefits to aquatic species as described above. The State Water Board has determined that, the aquatic resources benefits of the Proposed Project outweigh the significant and unavoidable impacts to aquatic resources, and the impacts are therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Phytoplankton and Periphyton

Overview

As noted above, the Proposed Project is a restoration project with an (underlying) purpose which includes timely water quality improvements related to the Lower Klamath Project. Objectives of the Proposed Project include improvement of the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to cyanobacteria and associated toxins, water temperature, and levels of biostimulatory nutrients and amelioration of conditions underlying high disease rates among Klamath River salmonids.

Components of the Proposed Project could have a significant effect on the phytoplankton and periphyton communities in the Klamath River. For example, Periphyton growth in low-gradient channel margin areas in the Hydroelectric Reach could increase on a seasonal basis following dam removal because removal of the reservoirs and elimination of hydropower operations in the J.C. Boyle Peaking Reach would provide additional low-gradient habitat suitable for periphyton assemblages, including potentially nuisance periphyton. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The EIR examines the potential effect of the Proposed Project on phytoplankton and periphyton communities in the Klamath River. As discussed in detail in Section 3.4 of the EIR, the State Water Board concludes that Potential Impacts 3.4-1, 3.4-2, 3.4-3, 3.4-4 (Hydroelectric Reach from the Oregon-California state line to Copco No. 1 Reservoir), and 3.4-5 will either not be significant or will be beneficial. Beneficial effects of the Proposed Project are long-term changes in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect to phytoplankton and periphyton communities is set out below.

CEQA Findings

Potential Impact 3.4-4 (Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam)

The State Water Board finds that the Proposed Project would result in alterations in the growth of nuisance periphyton species in the Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam) that would be significant due to increased nutrients and available low-gradient channel margin habitat formed by conversion of the reservoir areas to a free-flowing river and the elimination of hydropower peaking operations. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that Periphyton growth in low-gradient channel margin areas in the Hydroelectric Reach could increase on a seasonal basis following dam removal because removal of the reservoirs and elimination of hydropower operations in the J.C. Boyle Peaking Reach would provide additional low-gradient habitat suitable for periphyton assemblages (EIR, page 3-435).

Periphyton are a natural component of river ecology and they are an important element of aquatic food webs. The establishment and growth of periphyton, including nuisance periphyton species, along the margins of the newly created low gradient river channel is a natural process. While processes that influence periphyton establishment and growth have been identified (e.g., light availability, nutrient availability, water temperature, seasonal flow variations, sediment transport), variations in these processes within the Hydroelectric Reach of the Klamath River after dam removal would not completely prevent the natural potential for growth of nuisance periphyton species along the margins of the newly created low gradient river channels. In the reservoir areas of the Hydroelectric Reach that would become the newly created low gradient habitat, there is no periphyton since it is not suitable habitat.

The overall effect of the Proposed Project would likely be to increase periphyton in the margins of low gradient portions of Copco No. 1 and Iron Gate reservoir footprints due to the creation of new, previously uncolonized low gradient river channels. While there

is considerable uncertainty, there is the potential under the Proposed Project that nuisance periphyton species could be part of the periphyton assemblages that grow in the margins of these new low gradient river channels. The nuisance periphyton species would potentially provide habitat for the polychaete worm (*Manayunkia speciose*) that is the intermediate host of the fish parasites *Ceratomyxa shasta* and *Parvicapsula minibicornis*. As a result, the short-term and the long-term increase in growth of nuisance periphyton species due to increases in available habitat along channel margin areas of the Hydroelectric Reach within the Copco No. 1 and Iron Gate reservoir footprints also would potentially result in a new or further impairment of designated beneficial uses in this reach, and would therefore be a significant impact. No mitigation measure would eliminate the potential for natural establishment and growth of periphyton or specifically nuisance periphyton within these areas. Accordingly, there are no mitigation measures that can be proposed to significantly avoid or minimize this impact and reduce the impact to less than significant (EIR, page 3-436).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in periphyton assemblages that grow in the margins of these new low gradient river channels.

Under the Continued Operations with Fish Passage and No Action and No Project alternatives, there would be no short-term increases in sediment-associated nutrients that could potentially stimulate nuisance periphyton growth in the Hydroelectric Reach, Middle and Lower Klamath River, or the Klamath River Estuary. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project and No Action alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.4-4 (Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam)

As indicated above, the Proposed Project would result in alterations in the growth of nuisance periphyton species in the Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam) that would be significant due to increased nutrients and available low-gradient channel margin habitat formed by conversion of the reservoir areas to a free-flowing river and the elimination of hydropower peaking operations. However, the extent of this new growth is anticipated to be limited. (EIS, page 3-106.) As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact associated with periphyton assemblages.

Beneficial effects of the Proposed Project on periphyton and phytoplankton include long-term change in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary. Additionally, the Proposed Project would significantly reduce algal toxins, as discussed under Water Quality, above. The long-term benefits of the Proposed Project on phytoplankton throughout the California reaches of the Klamath River support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated with periphyton assemblages Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam).

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause significant and unmitigable impacts to periphyton assemblages in the reaches of the Klamath River from Copco No. 1 Reservoir to Iron Gate Dam, as noted above. The State Water Board further notes the anticipated benefits of the Proposed Project on the existing harmful phytoplankton conditions throughout the reaches of the Klamath River in California, as noted above. The State Water Board finds that the improvements in periphyton conditions outweigh the significant and unmitigable impact to periphyton, and that the impact is therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Terrestrial Resources

Overview

As noted above, the Proposed Project is a restoration project that will remove four hydroelectric facilities (and their associated reservoirs), converting the area to a free-flowing river. The Proposed Project incorporates restoration of the newly-exposed reservoir beds. Construction activities associated with the Proposed Project could have a significant effect on terrestrial resources. Examples of Proposed Project construction activities that have the potential to affect terrestrial resources include: (1) upgrading haul routes/bridges; (2) establishments of disposal sites; (3) improvements to water supply pipeline; (4) modifications to hatcheries; and (5) removing four 69-kV transmission lines, recreation structures (i.e., Mallard Cove and Copco Cove), dams, penstocks, spillway gates, decks, piers, powerhouse intake structures, gate houses, diversion control structures, powerhouses, switchyards, warehouses, and operator residences (see also EIR Table 2.7-3 and Figure 2.7-2 as well as EIS page 2-1 through 2-3).

The EIR examines the potential effect of the Proposed Project on terrestrial resources. As discussed in detail in Section 3.5 of the EIR, the State Water Board concludes that Potential Impacts 3.5-2, 3.5-3, 3.5-4, 3.5-5, 3.5-6 (long-term), 3.5-7 (rare natural communities in long term), 3.5-9 (long-term), 3.5-15, (Pacific tailed frog, southern torrent salamander, northern red-legged frog, western pond turtle (long-term), and all special-status amphibians and reptiles), 3.5-17, 3.5-18, 3.5-19, 3.5-20, 3.5-21, 3.5-23, 3.5-24, 3.5-25, 3.5-27, 3.5-29, and 3.5-30 will either not be significant or will be beneficial. The Proposed Project would result in several long-term beneficial effects on the following terrestrial resources: riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; benthic macroinvertebrates due to increased habitat availability and improved habitat quality; deer from an increase in winter range habitat; rare natural communities, wetlands, and riparian vegetation from herbicide use during reservoir restoration that would improve habitat conditions by reducing competition from invasive species; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects to terrestrial resources are set out below.

CEQA Findings

Potential Impact 3.5-1, EIS Pages 3-296 through 3-297, 3-571 through 3-575

The State Water Board finds that the Proposed Project would result in construction-related impacts on wetland and riparian vegetation communities, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that disturbances associated with construction areas, disposal sites, and haul roads where clearing, grading, and staging of equipment would occur could have short-term impacts on sensitive habitats, including wetlands and riparian habitats along reservoirs and river reaches. For example, heavy machinery traversing wetland and riparian areas could change local topography and impact wetland and riparian vegetation and could degrade plant community conditions. The Proposed Project identifies a number of pre-construction measures to reduce impacts on wetland and riparian habitats (Estuarine, Montane Riparian, Palustrine, and Wet Meadow) habitats including a wetland delineation within the limits of construction, conducted in 2019 that identified wetland areas that it was feasible to completely avoid through fencing, as well as those for which it would not be possible to completely avoid through fencing (with

any disturbance limited to less than .5 acres per site). The results of the wetland delineation were incorporated into the Proposed Project design to avoid and minimize direct impacts on wetlands to the maximum extent feasible, and non-reservoir dependent delineated wetland areas adjacent to the construction Limits of Work will be fenced to prevent inadvertent entry, as possible. There could be impacts on wetlands if the fencing does not include an appropriate buffer (i.e., a prescribed distance from the edge of the wetland in which construction activities are prohibited); however, with implementation of Mitigation Measure TER-1, the EIR found that short and long-term impacts on wetland communities from construction would be reduced to less than significant (EIR, Vol. III, pages AT1-680 – AT1-683).

In addition, construction best management practices (Originally Volume II Appendix B: Definite Plan – Appendix J but now EIS Pages 3-296 through 3-297, 3-571 through 3-575 and Hazardous Materials Management Plan) have been incorporated into plans for the proposed project, or required under conditions of certification. to reduce potential impacts on water quality in wetlands and other survey waters during construction, and implementation of Mitigation Measure WQ-1, (described above in Potential Impact 3.2-4), would reduce potential impacts on wetlands to less than significant. In addition, the FERC staff alternative in the EIS included development of an Erosion and Sediment Control Plan that identifies erosion and sediment control BMPs to minimize impacts from facilities removal and restoration activities in California.

The Reservoir Area Management Plan (Originally included in Volume II Appendix B: Definite Plan – Appendix H; most recent version as dated August 2022 and submitted to the State Water Board in August 11, 2022) includes details for the installation of native plants and aerial, barge, or hand seeding in appropriate areas to re-vegetate all areas disturbed, including in the reservoir footprint. The RAMP includes appropriate wetland and riparian replacement ratios which in most cases will result in a 1:1 replacement for riparian, and a 1:1 replacement for wetlands with instances of 1:3 for wetland to riparian habitat mitigation. The anticipated gains in wetland and riparian acreage from the Proposed Project are anticipated to considerably exceed a 1:1 replacement ratio for wetland acreage as required under the State Water Board's Wetlands Policy, resulting in no net loss of wetlands, even for those areas for which disturbance through fencing is not feasible and for limited areas not yet delineated that may have reductions in riparian or wetland acreage due to changes in the 100 year floodplain downstream of Iron Gate Dam. (See EIS, page 3-299 – 3-300). Note that such floodplain areas are adapted to respond to flood, erosion, and sediment deposition. (EIS, page 3-299.)

Mitigation Measure TER-1 Establish a 20-foot buffer around delineated wetlands

The KRRC shall establish a minimum of a 20-foot buffer around all delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would not result in a significant environmental impact. The buffer may be adjusted

(e.g., made larger or smaller) based on site-specific conditions, as determined by a qualified biologist acceptable to USACE, as necessary to ensure adequate protection of the delineated wetlands. The State Water Board has the authority to include this mitigation measure in its water quality certification for the project, and the measure is therefore feasible and used in the EIR analysis to make a significance determination.

Mitigation Measure TER-1's 20-foot buffer has been incorporated into the Proposed Project, except that it has been amended to clarify that the 20-foot buffer is not required for wetlands that are reservoir-dependent, as the Proposed Project will eliminate the viability of those wetlands through dam removal, as described in *Potential Impact 3.5-7, EIS, page 3-301*.

Potential Impact 3.5-2, EIS, page 3-300

The State Water Board finds that the Proposed Project would result in removal of wetlands and vegetation communities in the short term. Changes or alterations have been required in, or incorporated into, the project which will substantially reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these are insufficient to reduce the impact to less than significant in the short term, and it is not feasible to fully mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described in Potential Impact 3.5-1, mitigation has been incorporated into the project that would re-establish wetland and vegetation communities and implement protective measures to ensure the project results in no net loss in the long term,

The mitigation measures incorporated will result in substantially lessen impacts to wetland resources but will still result in significant and unavoidable impacts in the short term, while new wetland communities are re-establishing.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar or fewer short-term impacts on wetland resources as the Proposed Project. Even though there would be less activity under the other alternatives as compared to the Proposed Project (or in the case of the Fish Passage alternative, substantially fewer impacts to wetland resources) these would still result in a significant, short-term loss of wetland habitat.

Under the No Project and No Action Alternatives, there would be no short-term impacts on wetland resources. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-3, EIS, pages 3-292 through 3-300

The State Water Board finds that the Proposed Project would result in short-term, impacts from the creation of exposed and unvegetated soils susceptible to erosion and colonization by invasive species in the short term. Changes or alterations have been required in, or incorporated into, the project which will substantially reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these are insufficient to reduce the impact to less than significant in the short term, and it is not feasible to fully mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described above in *Potential Impacts 3.5-1 and 3.2-16* and in the EIS, mitigation has been incorporated into the project that would lessen impacts to vegetation communities by including special status riparian species protections, management of invasive species, construction BMPs, water quality monitoring and restoration measures.

The mitigation measures incorporated will result in substantially fewer impacts to vegetation communities but will still result in significant and unavoidable short term impacts.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves removal of reservoirs (i.e., Partial Removal Alternative, Three Dam Removal Alternative, and Two Dam Removal Alternative, No Hatchery Alternative) would have a similar impact related to exposed dirt with the associated risk of erosion and invasive species colonization, since all of these alternatives involve removal of the largest reservoirs.

Under the No Project, No Action and Fish Passage Alternatives) there would be no exposure of the reservoir beds. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-4, EIS, pages 292 through 3-300

The State Water Board find that the Proposed Project would result in short-term, significant and unavoidable impacts from the removal of dams and associated facilities, staging and storage areas. These construction activities would cause short-term ground disturbance and vegetation removal *(EIS p. 292 through 3-300)*. Changes or alterations have been required in, or incorporated into, the project which will substantially reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these are insufficient to reduce the impact to less than significant in the short term, and it is not feasible to fully mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As described above and in the EIS, mitigation has been incorporated into the project that would lessen impacts to vegetation communities by including invasive species

management measures, construction BMPs, water quality monitoring and restoration measures.

The mitigation measures incorporated will result in substantially lessen impacts to wetland resources but will still result in significant and unavoidable impacts.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction and removal of reservoirs (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative and Fish Passage Alternative, No Hatchery Alternative) would have similar or fewer short-term impacts on vegetation communities as the Proposed Project depending on the amount infrastructure removed and the associated laydown yards. Even though there would be less activity under the other alternatives as compared to the Proposed Project the difference in impacts are expected to be limited to similar areas and for a relatively short period of time. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives there would be no short-term impacts on vegetation communities Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-6 (short-term)

The State Water Board finds that the Proposed Project would result in short-term impacts on culturally significant species in riparian and wetland habitats, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that many of the species identified by the Native American Tribes in the Klamath River region as culturally significant occur in riparian and wetland habitats. Project activities including construction as well as reservoir drawdown would result in population-level impacts to culturally significant plant species or substantial degradation or removal of wetland and riparian habitat; therefore, there would be a significant short-term impact on culturally significant species (EIR, page 3-524).

The Proposed Project includes several actions to survey for wetlands and encourage rapid revegetation with native riparian species in the reservoir footprints as defined in the Reservoir Area Management Plan (Appendix B: Definite Plan – Appendix H) that would ensure no net loss of wetland or riparian habitat acreage and functions. The revegetation mixes are developed based on updated inventories of existing wetland and riparian vegetation around the reservoir perimeters; therefore, culturally significant

species will be documented and incorporated as part of the revegetation effort. The Historic Properties Management Plan includes a culturally significant plant enhancement program that would incorporate culturally significant plants in revegetation and incorporate Tribes in maintenance of the plant communities in selected areas. (EIS, page 3-492.) In addition, Mitigation Measure TER-1, as described above, includes wetland buffers to prevent intrusion in wetland habitats, deter heavy machinery from traversing the wetland, prevent runoff pollution from directly entering the wetland, and avoid substantial degradation in these areas. These measures would ensure that impacts on culturally significant species would be less than significant (EIR, page 3-524).

Potential Impact 3.5-7, EIS, page 3-301[13]

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term impacts on special-status plants from construction-related activities within the Limits of Work and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that construction activities including road, bridge, hatchery modifications, and culvert improvements (Section 3.22.2.3 Road Conditions) could result in direct mortality or damage to special-status plant species or indirect damage by degrading special-status plant habitat (e.g., introducing invasive plant species). Special-status plant species with the potential to occur in the Primary Area of Analysis for terrestrial resources are provided in Volume I, Table 3.5-4. As part of the Proposed Project, comprehensive floristic surveys would be conducted for special status-plants within the construction Limits of Work where ground-disturbing activities would occur plus an established buffer (i.e., a 100-meter buffer around disposal sites and a 10-meter buffer along access and haul roads) following the CDFW guidelines (CDFG 2009; Appendix B: Definite Plan – Appendix J) and the vegetation maps would be updated to reflect existing conditions including any rare natural communities that may present (EIR, pages 3-524 and 3-525).

If any special-status plants are documented, the Proposed Project design would be modified to avoid them, if possible. Where avoidance is not feasible, a combination of relocation, propagation, and establishment of new populations in designated conservation areas would be implemented, as determined in coordination with the resource agencies and invasive plant species would be controlled by implementing measures such as routine washing of construction vehicles and equipment (Terrestrial Wildlife Management Plan , as dated August 2022 (Submitted July 28, 2022), Hazardous Materials Management Plan as dated December 2021(Submitted July 7,

[13] The EIS combines the analysis of impacts to special-status plants from construction (Potential Impact 3.5-7) and reservoir removal (3.5-8.). These findings maintain the distinction as presented in the EIR, but note the EIS analysis in both places.

2022) and Reservoirs Area Management Plan as dated August 2022 (Submitted August 11, 2022)). There may be significant impacts on special-status plants where avoidance is infeasible and if replanting does not succeed (EIS, page 3-301). The 2020 EIR had developed Recommended Terrestrial Measure 1, establishing a 1:1 mitigation ratio for special-status plants.

Recommended Terrestrial Measure 1 − Establish Mitigation Ratios for Special-Status Plants

The Final Restoration Plan shall include a minimum 1:1 mitigation ratio and a Plant Mitigation and Monitoring Plan shall be developed for any special-status species that would be impacted by the Proposed Project. These features of Recommended Terrestrial Measure 1 would be implemented such that any impact to special-status plants would be less than significant (EIR, page 3-525).

Recommended Terrestrial Measure 1 was not included in the Terrestrial Wildlife Management Plan.

Overseeing development and implementation of terms and conditions relating to protection of terrestrial special-status plants and/or rare natural communities does not fall within the scope of the State Water Board's water quality certification authority. Because the State Water Board cannot ensure implementation of the terrestrial aspects of the Final Restoration Plan, it finds this impact as significant and unavoidable (EIR, page 3-525; EIS, page 3-301).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on special-status plants and rare natural communities as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, special-status plants and rare natural communities may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on special-status plants and rare natural communities. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-8, EIS, page 3-301

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term and long-term impacts on special-status wetland plants surrounding the reservoirs due to removal of Copco No. 1, Copco No. 2, and Iron Gate reservoirs and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that wetland habitat at reservoir margins supports potential habitat for several species of special-status plants (Volume I Table 3.5-4). There is potential for special-status plants to occur at the Lower Klamath Project reservoirs, and therefore there would be loss of habitat for these individual plants once the reservoirs are removed (EIR, page 3-526). The EIS confirmed that multiple populations of special-status plants associated with wetland habitat would be affected by draining the reservoirs. (EIS, page 3-301.)

Implementation of the Proposed Project is projected to result in a net increase in the areal extent of riparian habitat within the Primary Area of Analysis, largely as part of natural recruitment along newly-exposed mainstem river channel riparian corridors within the former reservoir footprints, but also as a result of active restoration management as described in the Reservoir Area Management Plan (Previously Volume II Appendix B: Definite Plan – Appendix H, most recent dated August 2022 and Submitted August 11, 2022) and Terrestrial Wildlife Management Plan (Dated August 2022 and submitted July 28,2022) The Terrestrial Wildlife Management Plan also includes a list in Table 5-2 of Special Status Plants with Potential to Occur in or near the Limits of Work for special-status plants in areas such as reservoir shorelines where changes in hydrology and geomorphology will occur due to the Proposed Project and includes provisions for the establishment of special-status plants, if any are documented within these areas (EIR, page 3-526).

There would be significant impacts on special-status plants if those plants are not captured during the targeted surveys and also where avoidance of documented and undocumented special-status plants is infeasible and transplanting or replanting does not succeed in re-establishment of new populations. The 2020 EIR developed Recommended Terrestrial Measures 2, Update Scoping Lists for Special Status Plants, as well as Recommended Terrestrial Measure 1, discussed above.

Recommended Terrestrial Measure 2 − Update Scoping Lists for Special-Status Plants.

The Final Restoration Plan shall include an updated list of special-status plants with the potential to occur in wetland and riparian habitats.

Recommended Terrestrial Measure 2 was incorporated into the Proposed Project (EIS, page 3-301.) Recommended Terrestrial Measure 1 was not.

However, because the State Water Board cannot ensure implementation of the terrestrial aspects of the Final Restoration Plan, it finds this impact as significant and unavoidable (EIR, page 3-526). As discussed above, overseeing development and implementation of terms and conditions relating to protection of terrestrial special-status plants and/or rare natural communities does not fall within the scope of the State Water Board's water quality certification authority.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in significant impacts on special-status plants.

Under the Continued Operations with Fish Passage Alternative, No Action and No Project alternatives, there would be no impact on wetland and riparian vegetation resulting from short- or long-term habitat loss or gain as compared with existing conditions, since reservoir drawdown and dam removal activities would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project or No Action Alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-10 (gray wolf), EIS, page 3-397

The State Water Board finds that the Proposed Project would result in short-term impacts on special-status mammals (gray wolf) from construction-related activities within the Limits of Work, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that construction activities including, but not limited to, structure demolition; hatchery modifications (Section 2.7.6 Hatchery Operations); road, bridge, and culvert improvements (Section 3.22.2.3 Road Conditions); and, use of heavy equipment to transport sediment during reservoir drawdown or to grade floodplain areas to support wetland and restoration of natural habitats (Appendix B: Definite Plan – Appendix H), could result in direct mortality or harm to special-status amphibian, reptile, and mammal species or associated habitat with the potential to occur in the Primary Area of Analysis for terrestrial resources (see Table 3.5-5 for the list of species). Construction activities that may affect habitat, result in direct contact to individuals, or result in indirect impacts on individuals, include demolition of structures, digging holes or trenches where wildlife may be trapped, and movement of heavy machinery through construction areas, staging areas, and along haul roads where these species could occur (EIR, page 3-527).

The aforementioned short-term construction-related activities would result in a significant impact on special-status amphibians, reptiles, and mammals, if present during construction. The Proposed Project includes multiple components to avoid and minimize construction-related impacts on wildlife species as detailed in the TWMP, including specific measures for gray wolf. Fencing would be established around construction zones with the potential to entrap wildlife, and escape-routs (e.g. ramps) would be erected prior to work cessation for holes left open overnight. Morning reviews of such sites would check for entrapped animals and encourage voluntary escape. To the extent voluntary escape is not possible, the animals would be trapped and transported to relocation zones that were previously identified in consultation with wildlife agencies. Construction teams would receive training in identifying special-status species from a designated qualified biologist.

For Gray Wolf, the KRRC consulted with USFWS, Oregon DFW and California DFW in developing the 2021 Biological Assessment, and determined that gray wolf is not present in areas expected to be affected by the Project, and that the Proposed Project is not likely to affect gray wolves that may transit through the area. The TWMP specifies that if gray wolves, rendezvous sites, or denning sites are observed within the project area, KRRC would coordinate with Oregon DFW's and California DFW's wolf biologists to determine the best management measures, which may include reduced driving speeds, signage on haul roads, limited operating periods, disturbance buffers, and avoidance of key areas measures to minimize impacts of proposed project activities on gray wolves. (EIS, page 3-397.) This consultation supersedes and is equivalent to the measures anticipated to be adopted through endangered species act permitting with the relevant wildlife agencies that were identified in the 2020 EIR as TER-6, which were focused on tracking gray wolf.

Implementation of the measures in the TWMP, developed in consultation with CDFW and USFWS, would reduce potential short-term construction-related impacts on gray wolf to less than significant (EIS, page 3-397).

Potential Impact 3.5-10 (amphibians, reptiles, and mammals [bats and American badger]), EIS page 3-308

The State Water Board finds that the Proposed Project would result in significant short-term impacts on special-status amphibians, reptiles, and mammals (bats and American badger) from construction-related activities within the Limits of Work. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect on special-status amphibians reptiles and mammals (Cal. Code Regs., tit. 14, § 15091(a)(1).) These are sufficient to reduce the population-level and long-term effects on these animals to less than significant EIS page 1Xi, 3-302 and 3-303, but it is not feasible to mitigate or avoid individual-level impacts in the short term to a less than significant level. (Cal. Code Regs., tit. 14, § 15091(a)(3).) It is not feasible to mitigate or avoid this impact to special-status mammals (bats and American Badger) (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The aforementioned short-term construction-related activities, discussed under *Impact 3.5-10 (*gray wolf*), EIS p. 3-397*, would result in a significant impact on special-status amphibians, reptiles, and mammals, if present during construction. The Proposed Project includes multiple components to avoid and minimize construction-related impacts on wildlife species as detailed in the TWMP, including specific measures for special-status and native amphibians and reptiles. Fencing would be established around construction zones with the potential to entrap wildlife, and escape-routs (e.g. ramps) would be erected prior to work cessation for holes left open overnight. Morning reviews of such sites would check for entrapped animals and encourage voluntary escape. To the extent voluntary escape is not possible, the animals would be trapped and transported to relocation zones that were previously identified in consultation with wildlife agencies. Construction teams would receive training in identifying special-status species from a designated qualified biologist that would be equivalent to the training described in Recommended Terrestrial Measure 4. The on-site biologist would report special-status species sightings to the California Natural Diversity Database.

Specifically for amphibians and reptiles, as described on EIS pages 3-302 to 3-303, the TMWP includes pre-construction visual surveys conducted by a trained biologist approved by CDFW to identify western pond turtle and other native reptiles and amphibians, and subsequent training of construction teams to identify native reptiles and amphibians and special-status species during construction activities. Native reptiles and amphibians would be avoided and encouraged to leave the vicinity, or captured and re-location attempted to the extent practicable. Relocation zones would be identified in consultation with wildlife agencies. The KRRC would report on Western Pond Turtle actions and information monthly, and would report other special-status reptile and amphibian sightings to the California Natural Diversity Database. This plan materially satisfies the requirements of Mitigation Measures TER-2 (which required development of a plan to address construction impacts on reptiles and amphibians through rescue and relocation) and TER-3 (which added specific requirements for western pond turtle construction impacts), as analyzed in the 2020 EIR, and of Water Quality Certification, Condition 16 for developing an Amphibian and Reptile Rescue and Relocation Program. It would be appropriate for the recommended terms and conditions relating to protection of terrestrial wildlife species other than amphibians, reptiles and gray wolf to include the Recommended Terrestrial Measures below, which have been developed in consultation with CDFW and USFWS. The Recommended Terrestrial Measures include additional components beyond those listed as part of the Proposed Project and would be necessary to reduce potential short-term construction-related impacts on special-status to less than significant, as specifically discussed in each measure (see EIR, Table 3.5-6 and the measures themselves) (EIR, page 3-529).

The State Water Board anticipates that implementation of the final terms and conditions, including the Recommended Terrestrial Measures, and any modifications developed through the FERC process that provide the same or better level of protection for special-status wildlife, would reduce impacts to less than significant. However, because

the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds the associated impacts to mammals to be significant and unavoidable.

Recommended Terrestrial Measure 3 − Roving Designated Biologist/RAMP

The RAMP and TWMP materially satisfies the requirements of the Construction Monitoring Plan, as referenced in KRRC's Definite Plan (Appendix B: Appendix J – Terrestrial Resource Measures). These plans describe where and when monitoring would occur, requirements and roles of a designated biologist for pre-construction surveys and reporting requirements. Specifically the TWMP describes the roving designated biologists (often referred to as a biological monitor or construction monitor) that shall be present as necessary to reduce the potential for impacts on special-status wildlife species and nesting birds that are protected by CDFW and USFWS. The designated biologist along with the worker training described in Recommended Mitigation Measure 4 materially satisfies the requirements of Mitigation Measure 3 described in the EIR.

Recommended Terrestrial Measure 4 − Biological Resources Education and Awareness Training

A mandatory biological resource education and awareness training shall be provided by a biologist approved by the resource agencies (USFWS and CDFW) for all on-site Proposed Project personnel and their associated supervisor. All persons shall receive the training prior to performing any ground-disturbing (including vegetation clearing and grading) work. This training shall inform Proposed Project personnel about special-status species that could occur on site. The training shall, at a minimum, consist of: (1) a brief introduction to the special-status species and identifying characteristics, including a short discussion of the biology, life history, habitat requirements, status, and legal protection; (2) measures being taken for the protection of these species and their habitats; and (3) actions to be taken if a special-status species is found within the area during construction activities. Species identification cards shall be issued to shift supervisors; these cards shall have photos, descriptions, and actions to be taken upon sighting of special-status species during construction. The training shall also include information on exotic and noxious species and appropriate decontamination measures. This training shall be repeated at least once annually and shall be provided to any new Proposed Personnel before beginning work activities, and if a change in special-status species occurs that requires further consideration. The KRRC shall provide interpretation for non-English speaking workers. Training Proposed Project personnel on special-status species will increase the potential of documenting special-status species in the construction area and allow for implementation of measures (e.g., rescue and relocate, implement buffers) to reduce impacts on the species to less than significant. Upon completion of the training, all employees shall sign an acknowledgment form stating that they attended the training and understand all

protection measures. Tracking of training activities shall be reported monthly to applicable agencies (EIR, page 3-533).

Recommended Terrestrial Measure 5 − Requirements for Construction Personnel

Establishing requirements for construction personnel will reduce the potential impacts on special-status terrestrial resources to less than significant by ensuring construction activities are occurring within designated boundaries and reducing the potential for wildlife to enter the work area or be affected by equipment. These requirements are described below.

- The KRRC shall clearly delineate the Limits of Work and prohibit any construction-related traffic outside of these boundaries.
- If vehicle or equipment maintenance is necessary, it shall be performed in the designated staging areas with adequate spill containment.
- Any worker who inadvertently injures or kills a federally or state-listed species, bald eagle, or golden eagle, or finds one dead, injured, or entrapped shall be required to immediately report the incident to the construction supervisor and on-site biologist. The designated biologist shall notify the resource agencies within promptly of the incident.
- All equipment shall be washed prior to arriving to and leaving the site to minimize the spread of non-native wildlife and exotic and noxious plants species to reduce the chance of impacts on special-status species and their habitats.
- Tracking of these requirements shall be reported monthly to applicable agencies (EIR, Vol. I, pages 3-533 and 3-534).

Recommended Terrestrial Measure 6 − Wildlife Exclusion and Entrapment

Construction areas, including staging areas and access routes, shall be fenced with high-visibility fencing to demarcate work areas to reduce the potential for terrestrial species to enter the work area and be harmed by construction equipment. The designated biologist or trained worker as outlined in the TWMP prior to fencing area to be cleared. The fencing shall be maintained throughout the construction period and checked daily when active construction is occurring to ensure that it remains secure and intact and that no wildlife are trapped by the fencing. Additional exclusion fencing or other appropriate measures shall be implemented in consultation with the CDFW if necessary to prevent use of construction areas by special-status species during construction. Installing visible construction fencing does not apply to the reservoir areas during drawdown or areas being restored with planting of vegetation, but rather staging and active construction areas.

To prevent entrapment of wildlife at construction sites, all excavated, steep-walled holes or trenches shall be inspected by a biologist or construction personnel approved by the resource agencies at the start and end of each working day. If no animals are present

during the evening inspection, plywood or similar materials shall be used to immediately cover the trench, Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before activities resume and the animals shall be allowed to escape unimpeded.

While this mitigation measure has evolved since originally drafted, the overall level of protection offered is materially the same and continues to provide the opportunity to adapt protection based on site conditions.

Recommended Terrestrial Measure 7 − General Special-status Wildlife Surveys and Pre-construction Surveys

Two years of surveys in 2019 and 2020 established baseline nesting bird habitat presence associated with construction activities (e.g., grubbing, structure modification) within the Limits of Work. The two years of surveys focused on the presence of any special-status species and potential for habitat to be present that could support special-status species identified in Table 3.5-5. Surveys for nesting birds are discussed in Recommended Terrestrial Measure 9, willow flycatcher in Recommended Terrestrial Measure 10, bald and golden eagle in Mitigation Measure TER-7, bats in Recommended Terrestrial Measure 12; surveys to be consistent with the Amphibian and Reptile Management Plan discussed in Mitigation Measure TER-2 [now in TWMP].

Pre-construction surveys shall be conducted by the designated biologist (as identified in the Terrestrial Wildlife Management Plan) at each location where construction is occurring prior to initiation of construction. If special-status species are present (excluding state or federally listed as threatened, endangered, or candidate species), they shall be captured and relocated out of harm's way to a suitable area designated prior to initiating the Proposed Project activities that have the potential to affect the species, in a way that is consistent with TWMP and Mitigation Measures for western pond turtle pre-construction surveys (TER-4) [now in TWMP] and the Amphibian and Reptile Management Plan (TER-2) [now in TWMP]. General special-status wildlife surveys and pre-construction surveys shall be reported monthly to applicable agencies (EIR, page 3-535).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on special status or native amphibians, reptiles or mammals as the Proposed Project, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on special status or native amphibians, reptiles or mammals. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-11

The State Water Board finds that the Proposed Project would result in significant short and long term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, it is not feasible to fully mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Section 2.7.6 Hatchery Operations), road and bridge upgrades (as discussed in Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Section 3.22.2.3 Road Conditions) could result in disturbance to or mortality of nesting birds. (See also EIS, p. 3-303.) Potential impacts on native birds during the breeding season, including several special-status species, many of which are referenced in Volume I Table 3.5-5, could occur under the Proposed Project including species such as peregrine falcon and non-special-status species such as swallows (northern rough-winged, tree, violet-green) (eBird 2018). Potential impacts could result from nest abandonment due to construction noise above ambient conditions, as well as habitat removal resulting from construction activities or physical harm (EIR, page 3-536).

The Proposed Project includes a Terrestrial Wildlife Management Plan (TWMP), developed in consultation with CDFW after certification of the 2020 EIR. The TWMP includes multiple components to avoid and minimize short-term construction-related impacts on nesting bird species. (EIS, page 3-303.) These include morning preconstruction surveys for native nesting birds no more than one week prior to planned habitat disturbance, if habitat removal activities are scheduled to occur during the primary nesting period of April 1 to July 31. (EIS, page 2-37.)_ To avoid disturbance to identified nesting birds, KRRC would use its professional judgment to implement the following management measures: "(1) limit vegetation removal and trimming to areas where construction or restoration actions (ground disturbance) are occurring; (2) limit vegetation removal/trimming (other than willow cutting and harvesting) to September 1 to April 1 (outside the nesting season), if practicable; (3) limit willow cutting harvesting to September 1 to January 31, if practicable; (4) leave transmission/distribution poles with active osprey nests in place and insert nest deterrents prior to nesting season (March–September); (5) observe occupied osprey nest during construction to determine whether

birds are exhibiting stress behaviors; (6) if birds are exhibiting stress behaviors, establish a set-back for construction actions, if practicable, given other factors including the construction schedule and nature of construction; and (7) alter the timing of construction activity if practicable given other factors including the construction schedule." (EIS, pages 2-37 to 2-38)

The Proposed Project avoidance and minimization measures would substantially reduce the potential for short-term construction-related impacts on nesting. Specifically, "Avoiding vegetation removal during the proposed time periods would minimize disturbance activities during the nesting season. Conducting surveys to identify areas of nesting activity, as proposed, would identify areas where extra caution during deconstruction is necessary. Monitoring bird behavior at active nests would allow trained personal to determine whether activities are causing undo stress and may create potential for nest abandonment or reduced breeding success. Altering deconstruction schedules and consulting with state wildlife management agencies, as needed would minimize potential for project activities to affect nesting birds." (*Id.*)

FERC staff has additionally recommended extending the survey area for bird nest surveys to 250 feet for non-eagle raptor nests, and a 50-foot buffer for other nesting birds. (FERC Staff Modification, Bullet 8, EIS, page 2-74.)

The TWMP in the Proposed Project includes some, but not all, of Recommended Terrestrial Measure 9, as developed in consultation with CDFW and USFWS and evaluated in the 2020 EIR, and described below.

Although removing individual active nests of non-special-status bird or CDFW special-status species would not rise to the level of population-level impacts, loss of a state- or federally- threatened active nest may affect populations levels and thus impacts on one individual or a nest may result in a significant impact (EIR, page 3-538).

Overseeing development and implementation of recommended term and conditions relating to nesting birds does not fall within the scope of the State Water Board's water quality certification authority. Because the State Water Board cannot ensure implementation of all the Recommended Terrestrial Measures, it finds short-term impacts to nesting birds to be significant and unavoidable (EIR, page 3-538).

Recommended Terrestrial Measure 9 − Nesting Birds

- Limit material vegetation clearing A designated biologist or a trained worker under the guidance of a designated biologist will conduct visual encounter surveys for native nesting birds if tree removal and/or material vegetation clearing activities will occur during the primary nesting period of April 1 - August 31 This shall include removal or trimming of trees along access roads and haul routes and within disposal sites. When this activity cannot occur (e.g., unanticipated activity, unanticipated delays, or vegetation re-grew during the growing season), a nesting bird survey as described in the TWMP shall be

conducted prior to vegetation removal. The Renewal Corporation will limit willow cutting and harvesting to September 1st to January 31st. Where clearing, cutting, grubbing, or structural removal/modification cannot occur outside the nesting season (e.g., not feasible with construction schedule, unanticipated activity), a nesting bird survey (as in the TWMP shall be conducted prior to habitat removal.

- Surveys should be conducted within one week prior to habitat removal to determine if any native birds are nesting in those areas and have the potential to be affected by habitat removal. Surveys may be repeated beyond that described above (i.e., one week prior to habitat disturbance) to ensure that no nests have become active within vegetation or structures to be removed. If an old nest has been documented, it shall be removed during the non-nesting season to discourage future use of the nest.
- For all raptors (other than eagles), inactive nests shall be considered for removal before the nesting seasons begin, to the greatest extent practicable. (This includes osprey nests within 0.75 mile of construction areas.) For those nests where access is difficult, traffic cones or other deterrents shall be placed in the nest platform to prevent nesting in the year of construction. All deterrents shall be removed as soon as possible after construction activity is ceased within the disturbance buffer (Table 3.5-7 below) for that species.
- If construction activities are expected to disturb an active nest identified during a VES survey, the Renewal Corporation will establish a set-back for construction actions.
- If it is not practicable to establish a set-back that will avoid disturbing the active nest, the Renewal Corporation will attempt to alter the timing of construction activity. • If it is not practicable to either establish a set-back that will avoid disturbing the active nest or alter the timing of construction activity, a site superintendent or foreman trained and supported by a DB will observe active nests of special status species and species protected under the Migratory Bird Treaty Act (MBTA) during construction to determine if any nesting birds are exhibiting stress behaviors, including visual displays, human interactions, and other visual behavioral indicative of agitation (Cornell Ornithology 2019). If special status birds or species protected under the MBTA are exhibiting stress behaviors, the Renewal Corporation will promptly contact CDFW and discuss a potential resolution that will not delay construction.
- If an active special-status bird nest is observed where the Proposed Project would destroy the nest, this could be a significant effect and KRRC shall obtain approval by applicable agencies.
- Tracking of nesting birds shall be reported once a month to applicable agencies (EIR, Vol. I, pages 3-538 – 3-540 and TWMP.

The 2020 EIR included a number of additional measures that lessened the potential for impacts to nest birds. These measures included a list of potentially present nest bird and seasonal timing restriction, an onsite avian biologist, sand hill crane specific surveys and other species specific measures. Some of these measures were not adopted by the KRRC, included in the FEIS, or were removed based on monitoring efforts since 2020. While the measures described above do substantially reduce the impacts to nesting birds but would still result in a potentially significant impact.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on nesting birds from construction-related noise and habitat alterations, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on nesting birds because no construction-related noise would be generated. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact EIS, page 4-15 (Long Term Impact on Special Status Species from loss of the reservoirs)

The State Water Board finds that the Proposed Project would result in significant and unavoidable impacts to special status species from loss of the reservoirs associated with the proposed action would result in unavoidable, significant, and adverse effects on lentic habitat in the project area. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) While measures described below substantially lessen the impacts on specifical status species it is not feasible to fully mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR and EIS describe that in the long term, reservoir drawdown would affect shoreline habitat currently used by special status species. The potential impacts could occur from being entrapped during sediment redistribution, change in temperature on overwintering turtles in reservoir sediment from drawdown, and entrapment in cracks and increased predation during migration over the reservoir footprints following drawdown. Impacts could also occur from the loss of reservoir habitat and the lentic environment that some special status species require. The TWMP, RAMP, and other

conditions as described in the EIS protect special status species through surveys, monitoring and individual measures prior to drawdown. The RAMP also includes a number of measures for restoration of the reservoir footprint after drawn down occurs. However these measures will not replicate the lentic environment as described in the EIS. For this reason, the impacts are significant and unavoidable and cannot be fully mitigated.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on reservoir environment dependent species from construction-related noise and habitat alterations, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on reservoir species because no construction-related noise would be generated. Therefore, Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-12 (short-term)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) While measures described below substantially lessen the impacts on willow fllycatcher, it is not feasible to fully mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Volume I Section 2.7.6 Hatchery Operations), road and bridge upgrades (Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in noise disturbance and habitat removal that may result in significant impacts on willow flycatcher. The Proposed Project does not include a significant amount of tree removal, but rather it is anticipated that habitat removal could occur if branches or small trees would need to be removed in order to upgrade bridges and roads. As a result, it is not anticipated that the quantity or quality of the habitat would be degraded, but rather the

potential for direct or incidental harm from noise or removal of a nest in a branch, if present. There are few locations where modeled willow flycatcher habitat overlaps the Limits of Work (EIR, Vol. I, page 3-541). If activities occur in this area, the Proposed Project may cause nest abandonment due to construction noise or direct harm due to physical removal of vegetation, similarly to the impacts described in Volume I Potential Impact 3.5-10 for nesting birds. The Proposed Project includes construction activities at Copco Road Bridge over Jenny Creek, which is located in an area of known willow flycatcher use (EIR, Vol. I, pages 3-540 – 3-541).

The Proposed Project includes components to avoid and minimize impacts,to native nesting birds, including special status species like the willow flycatcher, as described in, *Potential Impact 3.5-11*, including conducting a habitat evaluation to identify suitable habitat, and if it is determined that there would be impacts on the potential willow flycatcher habitat from Project implementation in areas where presence is uncertain or cannot be assumed The KRRC has conducted protocol surveys for willow flycatcher. Also, when harvesting willow pole cuttings to support restoration activities, KRRC proposes to avoid willow flycatcher nesting season (TWMP). The TWMP also includes measures specific for willow flycatcher protection, including updated identification of willow flycatcher habitat from monitoring year 2019 and 2020 limiting vegetation removal and trimming to where construction or ground-disturbing restoration actions are occurring, timing of pre-construction and drawdown habitat removal to limit impacts, and any restoration activities that require removal of material vegetation clearing (other than willow cutting and harvesting) to September 1st to March 31st (i.e., outside the primary nesting period)) following the timing developed with CDFW. The TWMP also includes monthly reporting on willow flycatcher survey methods and results, including detections, weather conditions during surveys, survey efforts to date, nesting or occupied status of habitat surveyed, any California DFW coordination to date and measures implemented. (EIS, p. 2-42.) The TWMP dated August 2022 (Submitted July 28, 2022) materially adopts some but not all of aspects of Recommended Mitigation Measure 10. The KRRC proposes to perform protocol level surveys for willow flycatcher habitat when construction or clearing may impact habitat in the second year of drawdown. The KRRC also proposes to perform work to the outside of the willow flycatcher nesting period and provide general special status species training, as described in the TWMP for construction crews.

However the TWMP and other associated plans does not implement all of the aspects of Recommended Mitigation Measure 10 and does not provide for an onsite biologist. The State Water Board previously found that implementation of these measures would reduce potential short-term construction-related impacts on willow flycatcher to less than significant. However, because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds this impact as significant and unavoidable (EIR, Vol. I, page 3-542).

Recommended Terrestrial Measure 10 − Willow Flycatcher

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on willow flycatcher from construction-related noise and habitat alterations, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on willow flycatcher because no construction-related noise would be generated. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-13 and EIS, page 3-305 4-15

The State Water Board finds that the Proposed Project would result in short-term impacts on bald and golden eagles from construction-related noise and habitat alterations. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Short-term construction-related activities including, but not limited to, structure demolition, hatchery modifications (Volume I Section 2.7.6 Hatchery Operations), road and bridge upgrades (Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in noise disturbance and habitat removal impacts on bald and golden eagles. Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act that prohibits anyone without a permit to take alive or dead any part of a bald or golden eagle or their nest (EIR, page 3-543). Impacts on bald and golden eagles are similar to those described above under Potential Impact 3.5-10 for nesting birds.

Bald eagle nesting trees are known to exist within or near proposed Lower Klamath Project construction areas. A bald eagle nest, active from 1986 to 1997, was located approximately two miles from Iron Gate Dam; a nest active from 1993 to 1997 was documented within 0.5 mile of Iron Gate Dam; and an active nest in 2002 was documented within two miles of Iron Gate Dam (Willy 2017, as cited in Appendix B: Definite Plan). As bald eagle nests have been previously documented nearby, and as bald eagles may use the same nests in multiple years, there is a potential for bald

eagles to nest in these same sites (or locations in similar habitats) and be disturbed by Proposed Project noise. Noise disturbance may cause nest abandonment while physical removal of vegetation may result in direct harm (EIR, page 3-543 – 3-544).

The Proposed Project includes components to avoid and minimize construction-related impacts on bald and golden eagles in a proposed Bald and Golden Eagle Conservation Plan, and in the Terrestrial Wildlife Monitoring Plan.

The 2020 EIR and water quality certification Condition 17 had included certain requirements described in Mitigation Measure TER-7 – Bald and Golden Eagle Management.

However, the Proposed Project's components to minimize construction-related impacts on bald and golden eagles has changed since issuance of the EIR and 2020 water quality certification Condition 17, in light of the completion of surveys required under TER-7 and the resulting specific information on nest locations, in light of consultation with CDFW and USFWS (which is the agency charged with implementing the Bald and Golden Eagle Protection Act), and in light of the determination that a take permit is necessary. The KRRC completed preliminary surveys and desktop analyses to further understand the presence and avoidance measures that may be required as part of the project. As a result of those efforts, the KRRC has determined that the Project may result in otherwise prohibited disturbance to bald and golden eagles, and have received take permits under the Bald and Golden Eagle Protection Act from USFWS. The Bald and Golden Eagle Conservation Plan was developed in support of the take application.

This plan has evolved since adoption of the EIR as a result of improved understanding of bald and golden eagle habitat and presences, and through consultation with USFWS regarding the anticipated requirements of a take permit. The changes include updating the timeframes for construction and establishment of revised buffer requirements to guide construction with a minimum amount of disturbance to nest sites. A take permit would impose binding legal restrictions on the KRRC. (EIS Page 2-41, 3-304, 3-305)As discussed in the EIS, "the Plan identifies bald and golden eagle territories in the vicinity of the project facilities and work areas, describes anticipated potential for removal activities to disturb nesting eagles, estimates potential take by year and territory, and describes BMPs that KRRC would implement to limit disturbance to nesting eagles. Proposed BMPs include, but are not limited to, removal of hazardous power poles, pre-disturbance surveys to confirm occupancy of known territories and identify new territories, avoiding use of aircraft near active nest sites, and improving conditions for anadromous fish in the Klamath River (and thereby increasing eagle prey abundance). (EIS, page 3-305.)However, even with these updated measures in place, there is still the potential for short-term impacts that could reduce the reproductive success of nesting bald and golden eagles. For this reason, a take permit is required, and the impact is significant (EIS, pages lvii, 3-304 to 3-305.)

Potential Impact EIS 4-15(table) page 3-304 -3-305

The State Water Board finds that the Proposed Project would result in long-term impacts on Bald and Golden Eagles from the loss of reservoirs used for foraging. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As discussed in the FERC EIS and above, the KRRC has developed a Bald and Golden Eagle Conservation Plan in support of an incidental take permit application to the USFWS. The plan identifies bald and golden eagle territories in the project area as well as facilities and work areas. The plan also describes potentially disturbing removal activities for nesting eagles and estimates potential take by year and territory, and describes BMPs that KRRC would implement.

However, the proposed measures will not mitigation the conversion of a lacustrine to riverine environment. This conversion has the potential to adversely affect foraging habitat for bald and golden eagles. For this reason, Impact EIS 4-15 (table) 3-304 -3-305 is significant and unavoidable (EIS, pages lvii, 3-304 – 3-305)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, and Two Dam Removal Alternative, would have similar impacts on bald and golden eagle foraging habitat from removal of reservoirs. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project, No Action Alternatives and Continued Operations with Fish Passage Alternative, No Hatchery Alternative) there would be no short-term impacts on bald or golden eagles because no conversion of lake habitat would occur. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-14 and EIS, page 3-313

The State Water Board finds that the Proposed Project would result in short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities. Changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant in the long-term. (Cal. Code Regs., tit. 14, § 15091(a)(1).) These changes or alterations, while substantially lessening impact in the

short-term, do not reduce those short-term impact to less than significant, and it is not feasible to mitigate the short-term impact to a less than significant level or to avoid the impact in the short-term. (Cal. Code Regs., tit. 14, § 15091(a)(1), (a)(3).) and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Section 2.7.6 Hatchery Operations), road and bridge upgrades (Appendix B: Definite Plan – Appendix K), and culvert improvements (Section 3.22.2.3 Road Conditions) could disturb bat roosts through construction noise, physical vibration, and direct removal of roosting habitat (EIR, page 3-547).

Structures in the Lower Klamath Project are providing habitat for small day roosts and large maternity colonies. Surveys performed in 2017 through 2019, and included the Terrestrial Wildlife Management Plan found 17 structures in the APE with roosts. Short-term impacts may occur from disturbing a maternity and/or hibernacula colony, including those possibly used by special-status bat species. Structure modifications or significant noise or vibrational disturbance occurring during the bat maternity season have the greatest potential to affect special-status bats (EIR, page 3-549).

In the long term, removing maternity or hibernacula roosts has the potential to result in population-level impacts, as it is not known if the bats will relocate or if there is suitable habitat in the adjacent area to support these roosts. Removal of large maternity or hibernacula roosts would result in a significant long-term impact (EIR, page 3-549).

Without surveying to document roosting bats, conducting construction within limited operating periods that are least likely to overlap with sensitive bat life histories, and creation of successful replacement roost habitats, impacts on bats in the short term and long term would be significant (EIR, page 3-549).

The Proposed Project includes components to avoid and minimize both short- and long-term construction-related impacts and loss of habitat on roosting bats in the Terrestrial Wildlife Management Plan, which updates measures proposed in the 2018 Definite Plan. (EIR, page 3-550 and EIS, pages 3-305 through 3-307). The 2020 EIR had identified Recommended Terrestrial Measure 12 to reduce the potential for short-term construction-related impacts on bats within the Primary Area of Analysis, by providing more specificity to the KRRC's proposed measures to ensure that short-term construction activities would not result in significant impacts on special-status species or substantially interfere with movement and/or migration of wildlife species, or that any remaining potentially significant impacts are mitigated to the extent feasible (EIR, page 3-550).

The Terrestrial Wildlife Management Plan includes a majority of the elements of Recommended Terrestrial Measure 12 that was included in the EIR. The KRRC has completed a number of surveying efforts, as described by Terrestrial Measure 12, to understand the presence and habitat of roosting bats that have the potential to be

impacted by the Project. These efforts have resulted in more information on specific roosting locations within the project footprint and allows for protection and avoidance measures to be tailored to specific circumstances. The KRRC used this information to refine the Terrestrial Wildlife Management Plan in coordination with trustee agencies, and included many of the requirements of Terrestrial Measure 12.

The TWMP alters the specifics of Terrestrial Measure 12 by identifying specific decontamination protocols, seasonal considerations with respect to structure removal, visual surveys prior to structure and tree removal, protection for maternity roosts, phased removal, bat access at certain Copco No. 2 locations, and barricading remaining structures to exclude bats and building replacement habitat. The TWMP identifies 17 locations of known bat activity along with the colony size and colony presence at different times of the year.

After review under NEPA, and considering input by the Fish and Wildlife Service, USEPA, California Department of Fish and Wildlife, KRRC, and the U.S. Department of the Interior, FERC staff had recommended in Bullet 9 that the TWMP be further amended to:

- specify that the preferred time frame for the removal of structures that provide roosting habitat for bats is September 1 to March 31, as recommended by FWS, rather than the proposed dates of September 31 to April 15, and
- comply with FWS's recommendations for roost structure removal if necessary between April 1 and August 31, including recommendations for surveys, staged structure removal, use of hazing devices to discourage bat use of structures remaining to be demolished, and weather conditions for removal activities in this time period. (See EIS, pages 3-312 through 3-313.)

KRRC has committed to include these changes. With or without incorporation of FERC staff's modifications, the EIS indicates that the impact will be significant in the short term, due to loss of habitat and the related potential for stress and mortality. (See pages 3-305 to 3-307 and 3-310 to 3-313.)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, and No Hatchery Alternative) would have similar sort-term and long-term impacts on bats from construction-related noise and loss of roosting habitat, though at a reduced scale. The Continued Operations with Fish Passage Alternative would not have short-term impacts to bats as the structures where large bat maternity roosts have been documented would be retained under this alternative (including Copco No. 1 Dam – C12 Gate house, Copco No. 1 Diversion Tunnel, and Iron Gate Diversion tunnel). However, hibernacula or maternity roosts are within the range of the lesser amount of construction, impacts would still be the same on those bat colonies as the Proposed Project. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed

Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.
Under the No Project and No Action Alternatives, there would be no impacts on bats because no construction-related noise would be generated, or habitat removed. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact EIS 4-15(table) page 3-304 -3-305

The State Water Board finds that the Proposed Project would result in potential short-term impacts from removal of facility structures and deconstruction-related activities would have adverse effects on roosting, hibernating, and maternity sites of Little Brown Bats.

The TWMP has a number of measures described above to lessen impacts on Little Brown Bat, including a specified period for facility removal and utilization of National White-Nose Syndrome Decontamination Protocols(EIS 3-390 and 2-74). While these measure significantly lessen impacts, the Proposed Project would still result in potentially significant short term impacts. For these these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative would have similar impacts Little B from deconstruction or removal activities. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project, No Action Alternatives and Continued Operations with Fish Passage Alternative, No Hatchery Alternative) there would be no short-term impacts on Little Brown Bat because little or no deconstruction activities would occur. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

Potential Impact 3.5-16 (Foothill yellow-legged frog egg masses)

The State Water Board finds that the Proposed Project would result in significant impacts to Foothill yellow-legged frog egg masses, if present, and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that Foothill yellow-legged frog, proposed as threatened under CESA, are known to occur in the lower reaches of the Klamath River, while only historical occurrences are known closer to the Proposed Project (EIR, page 3-556). High SSCs from dam removal could have a short-term significant impact on the foothill yellow-legged frog egg masses and tadpoles, if present. Silt has often been observed on the outer surfaces of egg masses, which may make the eggs less conspicuous and thereby possibly reducing predation by visual predators (Lannoo 2005). However, a study to evaluate the growth and survival of western toad tadpoles from initial pulses of 130 and 260 mg/L of suspended sediment documented slower growth rates and reduced survival to metamorphosis as a result of tadpoles consuming the sediment (Wood and Johnson 2009). Therefore, suspended sediment may result in mortality or harm to state-candidate-threatened foothill yellow-legged frogs through reduced survival and growth of egg masses and tadpoles, which would be a significant unavoidable impact (EIR, page 3-557). As discussed above in the discussion of Potential Impact 3.2-3, there are no feasible mitigation measures to meaningfully reduce sediment impacts. The EIS does not provide further analysis of foothill yellow-legged frog.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, and No Hatchery Alternative) would have similar sort-term and long-term impacts on foothill yellow-legged frog egg masses.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no short-term impacts associated with elevated SSCs in the mainstem Klamath River from reservoir drawdown since the dams would remain in place and no drawdown would occur under these alternatives. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-22 and EIS, page 3-396

The State Water Board finds that the Proposed Project would result in short-term and long-term impacts on western pond turtle from loss of aquatic habitat. Changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant in the long-term. (Cal. Code Regs., tit. 14, § 15091(a)(1).) These changes or alterations, while substantially lessening impact in the short-term, do not reduce those short-term impact to less than significant, and it is not feasible to mitigate the short-term impact to a less than significant level or to avoid the impact in the short-term. (Cal. Code Regs., tit. 14, § 15091(a)(1), (a)(3).)

The EIR and EIS explain that in the short term, reservoir drawdown would affect shoreline habitat currently used by western pond turtle. The potential impacts on western pond turtle may occur from turtles being entrapped during sediment

redistribution, change in temperature on overwintering turtles in reservoir sediment from drawdown, and entrapment in cracks and increased predation during migration over the reservoir footprints following drawdown. The KRRC proposes to draw down reservoirs in winter). Exposing reservoir sediment to ambient air conditions during and following drawdown will change the temperature of the sediment (more solar exposure and colder nights and possible wind shear). Turtles overwintering in the sediment would then be subject to these changing temperature stresses. There is a potential for erosion and shallow slides to occur at locations currently along the reservoir rims and existing water surface elevations. At Copco No. 1 Reservoir in particular, diatomite (fine-grained sedimentary rock formed from consolidated diatomaceous earth) terrace deposits surround much of the shoreline and extend below the surface waters. These deposits would exhibit low shear strength and would likely be unstable, potentially resulting in shallow slides that could entrap juvenile and adult turtles. Following drawdown, juvenile and adult western pond turtles may be affected including those that may be overwintering in the sediment or are present in the reservoir; turtles overwintering or present on land would not be affected by the sediment redistribution. The KRRC identified the locations of overwintering aquatic habitat (i.e., reservoir levels two meters deep) based on bathymetry data (AECOM et al. 2017), and in considering proximity to suitable basking and nesting habitation locations identified by PacifiCorp (2004a), the locations where there is the highest potential for redistribution of sediment to affect turtles at Copco No. 1 Reservoir are the northern arm of the reservoir near Beaver Creek and at Iron Gate Reservoir in the southeast cove, north cove at Camp Creek, and at the confluence of Jenny Creek and Fall Creek (Volume I Figures 3.5-7 and 3.5-8) (EIR, pages 3-563 – 3-564).

The sediment underneath the reservoir is approximately 80 percent water by volume, and after the reservoir is drawn down, the sediment is expected to dry, decrease in thickness, and form cracks. The sediment drying process may also result in turtles becoming trapped in the cracks and subject to predation. In addition, with drying sediment and inability to hide under vegetation or debris, this may increase the potential of predation and thermal stress on hatchlings migrating during the spring of the drawdown year (EIR, page 3-567).

Sediment redistribution and local hydrology downstream of the dams may also affect western pond turtle there, triggering movement of turtles to improved habitat (e.g. upland). Such movement could cause increased predation and reduced quality of forage. (EIS, page 3-396.)

Although exact numbers of take are not possible to identify, the impact on the reservoir population, particularly the reservoir population, may be significant. Implementation of Mitigation Measure TER-4 (western pond turtle rescue after reservoir drawdown operations), developed in coordination with CDFW, would reduce these potential short-term impacts (see EIR, page 3-567), but not reduce the impact to less than significant. (EIS, page 3-396.).

In addition to requiring Mitigation Measure TER-4, the State Water Board has authority to review and approve any final plan developed to protect western pond turtle through its water quality certification under Clean Water Act Section 401. The State Water Board has issued a water quality certification which sets forth monitoring and adaptive management requirements for an Amphibian and Reptile Management Plan as Condition 16. KRRC submitted a California Terrestrial and Wildlife Management Plan to the State Water Board for review and approval on July 28, 2022, and amended on October 10 the. This plan has been approved by the State Water Board. (See pp. 2-36 to 2-37 describing TWMP western pond turtle actions:

The EIR and EIS explain that in the long term, riverine habitat would continue to support the life history functions of western pond turtle, and that restoration efforts will create additional usable habitat (e.g wetlands). Although western pond turtles are documented throughout the Proposed Project reservoirs and along several reaches of the terrestrial resources Primary Area of Analysis, precise population data are not available. Thus, it is not possible to quantitatively assess population-level effects as a result of the Proposed Project (EIR, page 3-568; EIS, page 3-396). Implementation of Mitigation Measure TER-4 (western pond turtle rescue after reservoir drawdown operations), developed in coordination with CDFW, would reduce these potential long-term impacts to less than significant.

Mitigation Measure TER-4 Western Pond Turtle Rescue After Reservoir Drawdown Operations

Prior to implementing reservoir drawdown, KRRC shall develop a Western Pond Turtle Rescue and Relocation Plan in coordination with applicable agencies to identify a means of relocating as many turtles as feasible along the reservoir shoreline, assuming conditions are safe for all personnel. It is understood that not all turtles will be found, and not all turtles seen will be able to be captured and relocated. The goal of the plan shall be to apply a good-faith effort to reduce the number of turtles that are subject to mortality such that there will not be a significant impact on Western Pond turtles. The plan shall identify the following components:

- survey timing to cover multiple life stages (adults, overwintering adults, emerging hatchlings) present between initial reservoir drawdown and emergence;
- survey periodicity, focusing observations during periods of highest likelihood of observing these life stages—surveys may be considered complete after an identified number of surveys (e.g., three) does not detect turtles;
- survey locations that focus on suitable nesting habitat and locations where high numbers of turtles were documented during the general wildlife surveys
- relocation areas in suitable habitat (that provide cover and food resources), which may include lower reaches of tributaries to the Klamath River;

- survey methodology—as nests and young are difficult to locate, an approach of using a trained dog to identify nests should be considered; and
- reporting of survey results within 60 days of the completion of surveys to applicable agencies and the State Water Resources Control Board (EIR, pages 3-569 – 3-570).

Potential Impact 3.6.2.13 EIS *page 3-396*

The State Water Board finds that the Proposed Project would result in significant short term impacts to western pond turtles from drawdown, deconstruction, bank failures, floodplain entrapment, and habitat alterations could cause mortality to some individual western pond turtles. As described above and in the EIS the Proposed Project has the potential to result in individual impacts on western pond turtles during drawdown of project reservoirs, restoration or other project activities (EIS 302 and 3-395 and 3-396). The Proposed Project includes a number of mitigation measures as described more above but include, species rescues, restoration, slope stability monitoring, construction BMPs and a number of other measures included in the Reservoir Area Management Plan.

Changes or alterations have been required in, or incorporated into, the project which will reduce the potential impacts to western pond turtles in the short term. However, these changes or alterations, while substantially lessening impact in the short-term, do not reduce those short-term impact to less than significant, and it is not feasible to mitigate the short-term impact to a less than significant level or to avoid the impact in the short-term. (Cal. Code Regs., tit. 14, § 15091(a)(1), (a)(3).)

As discussed above in the discussion of Potential Impact *3.5-22*, there are no feasible mitigation measures to meaningfully reduce individual impacts of the proposed project on western pond turtles.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, and No Hatchery Alternative) would have similar sort-term impacts on western pond turtles.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no short-term impacts to western pond turtles since the dams would remain in place and no drawdown would occur under these alternatives. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-28

The State Water Board finds that the Proposed Project would result in significant short-term impacts on sensitive habitats and special-status terrestrial wildlife and plant species from construction activities on Parcel B lands and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that the Secondary Area of Analysis was used to evaluate potential impacts on sensitive habitats and special-status species on Parcel B lands. As discussed in Volume I Section 2.7-10 Land Disposition and Transfer, as part of the Proposed Project, Parcel B lands would be transferred to the states (i.e., California, Oregon), as applicable, or to a designated third-party transferee, following dam removal. The outcome of the future Parcel B land after transfer is speculative with regard to land use; while the lands would be managed for the public interest, this could include open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially others (EIR, page 3-574).

It is likely that there would be at least some construction for recreation facilities, active restoration, fencing, trail-building, or other land management activities. To the extent there are construction activities, these could involve the same types of potential short-term impacts to sensitive habitats and to special-status terrestrial wildlife and plant species as described in Volume I Section 3.5.5.1 Vegetation Communities, 3.5.5.2 Culturally Significant Species, and Section 3.5.5.3 Special-status Species and Rare Natural Communities. In the long term, if managed grazing activities were to occur beyond the level occurring under existing conditions, this could result in reduced habitat diversity and erosion-related significant impacts on special-status species, vegetation communities, and wetlands within the Secondary Area of Analysis (EIR, page 3-575).

To the extent there are construction activities under future land uses, it would be appropriate to implement the terms and conditions recommended to FERC relating to protection of sensitive habitats and special-status species and to include measures that provide the same or better level of protection for sensitive habitats and special-status terrestrial wildlife and plant species as the measures specified in Mitigation Measures WQ-1 and TER-1 through TER-4, and Recommended Terrestrial Measures 1 through 13, as modified for construction involved in the particular future land use activity or activities that result from the transfer of Parcel B lands. However, because the State Water Board cannot ensure implementation of recommended measures, the impact is significant and unavoidable (EIR, page 3-575).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, and No Hatchery Alternative) would have similar impacts on sensitive habitats and special-status terrestrial wildlife and plant species, though at a reduced scale for some of the alternatives. However, these alternatives would result in

significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no impacts on bats because no construction-related noise would be generated, or habitat removed. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.5-7 (special status)

As indicated above, the Proposed Project construction activities including road, bridge, hatchery modifications, and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in direct mortality or damage to special-status plant species or indirect damage by degrading special-status plant habitat (e.g., introducing invasive plant species). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable short-term impact on special-status plants from construction-related activities within the Limits of Work.

The Proposed Project includes long-term beneficial effects on the following terrestrial resources: riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; benthic macroinvertebrates due to increased habitat availability and improved habitat quality; deer from an increase in winter range habitat; rare natural communities, wetlands, and riparian vegetation from herbicide use during reservoir restoration that would improve habitat conditions by reducing competition from invasive species; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status plants from construction-related activities within the Limits of Work.

Potential Impact 3.6.2.13

The State Water Board finds that the Proposed Project would result in significant short-term impacts to western pond turtles from reservoir drawdowns, deconstruction, bank failures, floodplain entrapment, and habitat alterations that could result in mortality. As described above, the Proposed Project has a number of activities that have the potential to result in individual impacts to western pond turtles. As explained above, and similarly for potential impact *3.5-22* mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on western pond turtles. However, the Proposed Project is also expected to provide long term benefits to western pond turtles as a result of more riverine habitat in the project area and removal barriers.

The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on aquatic and terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on western pond turtles.

Potential Impact 3.5-8

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term and long-term impacts on special-status wetland plants surrounding the reservoirs due to removal of Copco No. 1, Copco No. 2, and Iron Gate reservoirs. As indicated above, the Proposed Project would result in significant impacts on special-status wetland plants if those plants are not captured during the targeted surveys and also where avoidance of documented and undocumented special-status plants is infeasible and replanting does not succeed in re-establishment of new populations. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on special-status wetland plants.

The Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status wetland plants surrounding the reservoirs.

Potential Impact 3.5-10 (bats and American badger)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on special-status mammals (bats and American badger) from construction-related activities within the Limits of Work. As indicated above, the Proposed Project would result in significant impacts on special-status mammals (bats and American badger) due to construction activities, such as structure demolition hatchery modifications, and road, bridge, and culvert improvements, that could result in direct mortality or harm to special-status amphibian, reptile, and mammal species or associated habitat with the potential to occur in the Primary Area of Analysis for terrestrial resources. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on special-status mammals (bats and American badger) because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status mammals (bats and American badger) due to construction activities.

Potential Impact 3.5-11

The State Water Board finds that the Proposed Project would result in significant short and long term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work. As indicated above, construction activities associated with the Proposed Project, such as structure demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could result in disturbance to or mortality of nesting birds, including nest abandonment due to

construction noise and habitat removal. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on nesting birds because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on nesting birds.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short-term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work.

Potential Impact EIS 4-15 (Long Term Impact on Special Status Species from loss of the reservoirs)

The State Water Board finds that the Proposed Project would result in significant long term impacts on special status species that depend on lentic environments. As described in the EIS, removal of reservoirs will convert open water environments to riverine environments, change water temperatures and water quality.

However, the Proposed Project includes long-term beneficial effects on terrestrial and aquatic resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization, potential improvements to foraging opportunities, improved water quality along with other benefits described in the EIS. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on reservoir dependent special status species. The overall benefits of the Proposed Project along with benefits on terrestrial resources and aquatic species, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts.

Potential Impact 3.5-12 (short-term)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs. As indicated above, construction activities associated with the Proposed Project, such as structure demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could result in noise disturbance and habitat removal that may result in significant impacts on willow flycatcher. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on nesting birds because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on nesting birds.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs.

Potential Impact 3.5-14

The State Water Board finds that the Proposed Project would result in short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities. As indicated above, construction activities associated with the Proposed Project, such as structure demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could disturb bat roosts through construction noise, physical vibration, and direct removal of roosting habitat. Structure modifications or significant noise or vibrational disturbance occurring during the bat maternity season have the greatest potential to affect special-status bats. In the long term, removing maternity or hibernacula roosts has the potential to result in population-level impacts, as it is not known if the bats will relocate or if there is suitable habitat in the adjacent area to support these roosts. As explained above, mitigation/avoidance of this impact is not

feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on bats in the short term and long term.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short- and long-term significant and unavoidable impacts on special-status bats, maternity roosts, and hibernacula.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities.

EIS, page 4-15

The State Water Board finds that the Proposed Project would result in significant impacts to Little Brown Bat, if present. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on bats in the short term.

The State Water Board finds that the Proposed Project would result in potential short-term impacts from removal of facility structures and deconstruction-related activities would have adverse effects on roosting, hibernating, and maternity sites of Little Brown Bats.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant short term impacts on special-status bats, maternity roosts, and hibernacula from loss of roosting habitat at existing Lower Klamath Project facilities.

EIS 4-15(table) page 3-304 -3-305

The State Water Board finds that the Proposed Project would result in significant impacts to Bald and Golden Eagles, if present. As indicated above, the Proposed Project has the potential to impact Bald and Golden Eagles from the loss of reservoirs used for foraging. As described above, mitigation/avoidance of this impact is included but is not feasible to fully mitigation the impacts to Bald and Golden Eagles. In the long

term, implementation of the Proposed Project is expected to increase salmonid populations and thusly provide increased foraging habitat for Bald and Golden Eagles. The Proposed Project will restore the free flowing nature of the mainstem Klamath River and is expected to provide a benefits to many terrestrial resources that are utilized by bald and golden eagles. For this reason and aquatic resource benefits described above, the long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts.

The overall benefits of the Proposed Project along with benefits on terrestrial resources including increased salmonid foraging opportunities support the State Water Board's approval of the Proposed Project despite the significant impacts on foraging habitat.

Potential Impact 3.5-2, EIS, page 3-300

The State Water Board finds that the Proposed Project would result a significant and unavoidable short term impact from removal of wetland habitat. Additionally, while the EIS found a significant short-term impact on wetland habitat, the EIR did not. This difference in how the environmental review documents analyzed the temporary loss of wetland habitat indicates, that while there is a significant impact to wetland habitat, this impact is not severe in its degree.. As described above, a number of measures will be implemented to ensure that the Proposed Project minimizes impacts to existing wetland and riparian areas and results in appropriate protection measures of wetland and riparian habitat, over the long term.

The Proposed Project is a restoration project that re-establishes a natural riverine system, including riparian benefits to reestablishment of a riverine transport system, and new wetland habitat along the river reaches of the mainstem Klamath and its tributaries that were previously submerged, and increased habitat complexity.

Removal of the Lower Klamath Project dams would restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate transport. Dam removal would also support habitat complexity.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short duration and low degree of severity of the impact, and the multiple environmental benefits of the Proposed Project as described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated short term loss of wetland habitat.

Potential Impact 3.5-3, *EIS, page 3-300*

The State Water Board finds that the Proposed Project would result a significant and unavoidable short term creation of exposed and unvegetated soils susceptible to erosion and colonization by invasive species. Mitigation/avoidance of this short term impact is included but is not feasible to fully mitigation the impacts. The long-term benefits of the Proposed Project including increased salmonid habitat access, improved water quality and other terrestrial resource benefits support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant impacts

Potential Impact 3.5-4, *EIS, page 3-300*

The State Water Board finds that the Proposed Project would result a significant and unavoidable short term impact from the removal of dams and associated facilities, staging and storage areas. Mitigation/avoidance of this short term impact is included but is not feasible to fully mitigation the impacts. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant impacts

Potential Impact 3.5-16 (Foothill yellow-legged frog egg masses)

The State Water Board finds that the Proposed Project would result in significant impacts to Foothill yellow-legged frog egg masses, if present. As indicated above, high SSCs from dam removal could have a short-term significant impact on the foothill yellow-legged frog egg masses and tadpoles, if present, through reduced survival and growth of egg masses and tadpoles. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on Foothill yellow-legged frog egg masses, if present.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients

upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts on Foothill yellow-legged frog egg masses.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts on Foothill yellow-legged frog egg masses, if present.

Potential Impact 3.5-28

The State Water Board finds that the Proposed Project would result in significant short-term impacts on sensitive habitats and special-status terrestrial wildlife and plant species from construction activities on Parcel B lands. As indicated above, it is likely that there would be at least some construction for recreation facilities, active restoration, fencing, trail-building, or other land management activities on Parcel B lands that could involve the same types of potential short-term impacts to sensitive habitats and to special-status terrestrial wildlife and plant species as the main Project. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands. The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands.

Conclusions

The State Water Board recognizes that the Proposed Project is anticipated to have significant impacts on terrestrial species, as well as beneficial impacts on terrestrial species, as described above. The State Water Board finds that the benefits to

terrestrial species outweigh the significant and unavoidable impacts, and that the impacts are therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Flood Hydrology

Overview

The Proposed Project includes components that could have a significant effect on flood hydrology but are necessary to accomplish the intended long-term water quality and fishery improvements. The Final EIR examines the potential effect of the Proposed Project related to flood hydrology. As discussed in detail in Section 3.6 of the EIR, the State Water Board concludes that Potential Impacts 3.6-1, 3.6-2, 3.6-3 (flood forecasting), 3.6-4, 3.6-5, 3.6-6, and 3.6-7 will either not be significant or will be beneficial. Beneficial effects of the Proposed Project include long-term decrease in the risk of dam failure resulting in flooding of areas downstream of the Lower Klamath Project.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect associated with changes to the 100-year floodplain is set out below.

CEQA Findings

Potential Impact 3.6-3 (exposing structures to a substantial risk of damage due to flooding)

The State Water Board finds that the long-term change in the Federal Emergency Management Agency (FEMA) 100-year floodplain inundation extent from Iron Gate Dam (RM 193) to Humbug Creek (RM 174) is a significant environmental effect that could potentially expose existing structures, which cannot feasibility be moved or elevated, to a substantial risk of flood damage and/or loss. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could alter the 100-year floodplain inundation area downstream of Iron Gate Dam between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012). The modeling indicates that the differences between existing conditions and the Proposed Project are minor. Floodplain inundation maps illustrating these model results are presented in Volume II, Appendix K of the EIR. The mapping includes the effects of the increase in the 100-year flood peak flow rate and the small amounts of sediment deposition in the river channel following removal of the Lower Klamath Project dams (EIR, page 3-670).

USBR (2012) estimated the number of residences and structures located along the Klamath River between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) that would potentially be affected should the dams be removed. This estimate was based on photo interpretation and field visits. The EIR indicates that a total of 34 legally-established habitable structures are located within the existing 100-year floodplain between Iron Gate Dam (RM 193) and Humbug Creek (RM 174), and an estimated 2 additional legally-established habitable structures would be within the altered 100-year floodplain in the same reach following dam removal, for a total of 36 legally established habitable structures within the altered 100-year floodplain following dam removal (Volume II Appendix B: Definite Plan) (EIR, page 3-631).

An estimated three river crossings in this downstream reach could also be affected by the increase in flood depths: two pedestrian bridges and the Central Oregon and Pacific Railroad Bridge (Appendix B: Definite Plan). The KRRC proposes to remove Pedestrian Bridge #1, which is dilapidated and is not structurally safe, with the owner's permission. The KRRC proposes to consult with the owner of Pedestrian Bridge #2, which is in good condition, during the detailed design phase to determine whether this bridge should be removed or replaced, at the KRRC's expense. The KRRC proposes to perform more analysis during the detailed design phase to confirm the effects of scour on the railroad bridge and the KRRC would make any needed improvements (EIR, pages 3-631 – 3-632, EIS, page 3-43).

The change to the 100-year floodplain inundation area between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) due to dam removal would result in exposing approximately two additional habitable structures to a substantial risk of damage due to flooding and is considered a significant impact. To address this potential impact, the Proposed Project includes implementation of the Downstream Flood Control Project Component (Project Component), as described in Volume I Section 2.7.8.4 Downstream Flood Control and in Appendix B: Definite Plan. This Project Component replaces Mitigation Measure H-2 from the 2012 KHSA EIS/EIR (EIR, page 3-632).

The KRRC proposes to work with willing landowners to implement a plan to address the significant flood risk for the 36 habitable structures (including permanent and temporary residences) located in the altered 100-year floodplain between Iron Gate Dam and Humbug Creek following dam removal. The KRRC would work with the owners to move or elevate the habitable structures in place before dam removal, where feasible, to reduce the risks of exposing people and/or structures to damage, loss, injury, or death due to flooding. However, flood damage and/or loss of structures that are not feasible to move or elevate would be a significant impact. Final determination of the future 100-year floodplain after dam removal would be made by FEMA. The KRRC is coordinating with FEMA to initiate the map revision process (Appendix B: Definite Plan). The Project Component would also evaluate the river crossings that could be affected by a substantial risk of damage due to flooding (EIR, page 3-632).

Under the Proposed Project, the KRRC's Emergency Response Plan would include informing the NWS River Forecast Center of a planned major hydraulic change (i.e., removal of four dams) to the Klamath River that could potentially affect the timing and magnitude of flooding downstream of Iron Gate Dam (Appendix B: Definite Plan). As described in the Definite Plan (Appendix B), the KRRC would also inform FEMA of the planned major hydraulic change to the Klamath River (i.e., dam removal) that could affect the 100-year floodplain. The KRRC would submit a letter of map revision (LOMR) to FEMA to provide recent hydrologic and hydraulic modeling, and updates to the land elevation mapping so FEMA can update its 100-year floodplain maps downstream from Iron Gate Dam, as needed. While the State Water Board anticipates that implementation of the Downstream Flood Control Project Component and the Emergency Response Plan, and any modifications developed through the FERC process that provide the same or better level of protection against flood damage, would reduce impacts to less than significant, because the State Water Board cannot ensure their implementation this impact is significant and unavoidable (EIR, pages 3-632 – 3-633).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in a change to the 100-year floodplain inundation area resulting in exposure of structures to a substantial risk of damage due to flooding.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project dams would remain and there would be no change to the 100-year floodplain. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.6-3 (exposing structures to a substantial risk of damage due to flooding)

As indicated above, the Proposed Project would result in a change to the 100-year floodplain inundation area between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) due to dam removal, exposing approximately two additional habitable structures to a substantial risk of damage due to flooding. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact associated with changes to the 100-year floodplain.

However, removal of the Lower Klamath Project dams would result long-term decrease in the risk of dam failure resulting in flooding of significantly more structures

downstream of the Lower Klamath Project (Potential Impact 3.6-6). In addition, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat. Furthermore, the EIS found the level of flood risk to structures to be less than significant, while the EIR found it to be significant. (Compare EIS, page 3-44 with EIR, Vol. I, page 3-633.) This difference between the environmental review documents indicates that the impact, while significant, is not severe. The long-term flood risk and other environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated with changes to the 100-year floodplain.

Conclusions

The State Water Board recognizes that the Proposed Project will have a significant and unavoidable flood risk for 2 structures in the 100 year floodplain, and that there is a benefit in reduction in the risk of dam failure with dam removal.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project. Thus, the State Water Board finds that impact is acceptable.

Groundwater

Overview

The Area of Analysis for groundwater impacts includes the area within 2.5 miles of Copco No. 1, Copco No. 2, and Iron Gate reservoirs (Volume I Figure 3.7-1), which encompasses the area immediately adjacent to the reservoirs where the likelihood of groundwater well impacts due to the Proposed Project is greatest, as well as areas further from the reservoirs where regional groundwater flow data are generally available (EIR, Figure 3.7 2).

The Final EIR and EIS consider whether a decline in groundwater levels could occur in existing wells adjacent to the reservoirs in response to the decrease in reservoir surface-water elevations if the dams, and therefore reservoirs, are removed as part of the Proposed Project. The Final EIR also specifically considers whether the Proposed Project could interfere with groundwater recharge and adversely affect surface water conditions in the Klamath River. As discussed in Volume I Section 3.7, the State Water Board concludes that Potential Impacts 3.7-1 and 3.7-2 would not be significant. Similarly, the EIS does not find a significant impact on groundwater supply wells in the short or long term. (EIS, pages 3-47 to 3-50.)

CEQA Findings

The State Water Board finds that there would be no significant impact to groundwater resources due to implementation of the Proposed Project. The EIR explains that in light of the likely connectivity of some wells' water source with the reservoir, and in light of data gaps, it is possible that removal of the reservoir would cause a substantial decrease of groundwater levels and a corresponding decrease in production rates in existing wells to a degree that interferes with existing or planned uses. This would be a significant impact.

However, the Proposed Project includes implementation of the California Water Supply Management Plan, as described in EIS, page 2-52 (previously the Groundwater Well Management Plan, as described in Volume I, Section 2.7.8.7 Groundwater Well Management Plan and in Appendix B: Definite Plan). The California Water Supply Management Plan is intended to identify groundwater wells that may be adversely impacted following dam removal and reservoir drawdown and provide sufficient monitoring to understand the effects, if any, on groundwater levels and quality. The Well Management Plan would further identify short and long-term measures to address and mitigate any supply impairments encountered (EIR, page 3-664).

Under the California Water Supply Management Plan, if groundwater levels in existing wells adjacent to the Lower Klamath Project reservoirs are found to be substantially depleted following dam removal, such that production rates drop to levels that do not support designated domestic or irrigation uses, the KRRC would undertake measures to return the production rates of the affected domestic or irrigation groundwater supply wells to conditions existing prior to dam removal. Short-term measures would include actions providing temporary water supplies until long-term measures such as motor replacement, well deepening, or full well replacement are identified and implemented. The regional and local groundwater pattern of groundwater flow toward the Lower Klamath Project reservoirs suggests that the measures in the Groundwater Well Management Plan would be successful in completely addressing the identified potential impacts. Because successful implementation of the proposed short-term and long-term measures would return production rates of any affected domestic or irrigation groundwater supply wells to conditions existing prior to dam removal, there would be no significant impact on groundwater levels in existing wells adjacent to the reservoirs (EIS, page 3-49 to 3-50).

The State Water Board has issued a water quality certification which sets forth monitoring and reporting requirements for groundwater wells surrounding the Lower Klamath Project reservoirs as part of Condition 15.

Because of the underlying geology, removal of the Lower Klamath Project reservoirs is not expected to interfere with groundwater recharge that could potentially affect surface water flows in the Klamath River. Sometimes, removing reservoirs from an area can result in percolation of less surface water to the underlying groundwater aquifers.

However, as discussed in Section 3.7.2 Environmental Setting the reservoirs generally lie within rock valleys where groundwater recharge is expected to be low. Gannett et al. (2007) concluded that the Klamath River reaches in the Area of Analysis are gaining reaches (i.e., groundwater discharges to the stream). This assessment and the characteristics of the rock surrounding the reservoirs suggest that any surface water that may have infiltrated to groundwater aquifers under the reservoirs would likely discharge back to the river just downstream from the impoundments, rather than increasing aquifer storage. Therefore, there would be no significant impact on groundwater recharge and the resulting groundwater/surface water interactions due to the Proposed Project (EIR, page 3-665).

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on groundwater resources and no statement of overriding consideration is needed for this resource.

Water Supply/Water Rights

Overview

The Proposed Project will result in short- long-term changes to Klamath River hydrology. Over the short term the release of sediment currently trapped behind the Lower Klamath Project dams is expected to result in a period of increased turbidity. Over the long term, the Klamath River will return to a more natural, free-flowing riverine condition in the existing Hydroelectric Reach, compared to the current conditions of slower-moving reservoir habitat. The EIR analyzed whether these changes could adversely affect existing diversions of water from the Klamath River or Fall Creek, a potentially-affected tributary.

The EIR includes Section 3.8 *Water Supply/Water Rights* and the EIS includes Section 3.2 *Water Quantity*, that analyze and mitigate potential significant impacts of the Proposed Project to the several water users that divert water from the Klamath River or Fall Creek. The EIS and EIR examine the potential effect of the Proposed Project on water supplies and water rights in the Area of Analysis. In general, because the reservoirs that will be removed under the Proposed Project do not store water for irrigation or environmental purposes, the Proposed Project will not affect water supplies needed for the Klamath Irrigation Project or to meet flows required under biological opinions. As discussed in detail in EIR Volume I Section 3.8, the State Water Board concludes that Potential Impacts 3.8-1, 3.8-2, and 3.8-5 will not be significant. (See also EIS, pages 3-46, 3-50.)

CEQA findings for the remaining potentially significant effects on water supply/water rights are set out below.

CEQA Findings

Potential Impact 3.8-3

The State Water Board finds that the effect of the release of stored sediment during reservoir drawdown on Klamath River geomorphology and water intake pumps downstream of Iron Gate Dam is a potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR (pages 3-680 to 3-682) explains that because the Proposed Project will result in the release of sediments currently trapped behind the Lower Klamath Project dams, there is a potential for fine sediment deposits to cause operational problems for water diversion facilities associated with the fifteen active and inactive water rights in the reach between Iron Gate Dam and Cottonwood Creek. It is possible that such operational problems could result in injury to an existing water right or decrease water supplies below what is needed for human health and safety.

Mitigation Measure WSWR-1 will reduce the potential impact to less than significant because it requires the KRRC to identify and contact all water right holders with points of diversion on the Klamath River prior to drawdown to assess interest in further identification of impacts to each right holder's water supply. If a right-holder is interested and impacts to the right-holder are identified, the KRRC is required to provide a replacement water supply and implement measures that will allow the right holder to divert water in the same manner as before dam removal. The KRRC is required to submit reports on implementation prior to and annually for the first two years following drawdown.

This measure is required under Water Quality Certification Condition 15, and covered in Section 2.0 of the California Water Supply Management Plan.

Potential Impact 3.8-4

The State Water Board finds that the need to relocate the City of Yreka's water supply pipeline after drawdown of Iron Gate Reservoir under the Proposed Project is a potentially significant impact on the City of Yreka's water supply, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR (pages 3-682 to 3-683) explains that because the existing water supply pipeline for the City of Yreka passes under Iron Gate Reservoir it will have to be relocated prior to decommissioning of the reservoir to prevent damage after the reservoir has been drawn down. It is anticipated, but not certain, that disconnection of the City of Yreka pipeline for the purpose of relocation will not result in a water supply

disruption. If a water supply disruption were to occur, it would constitute a significant impact.

Mitigation Measure WSWR-2 will avoid the potential significant impact because it requires the KRRC to construct a new, fully operational replacement for the section of the City of Yreka pipeline that crosses Iron Gate Reservoir prior to initiating drawdown, and to limit any water delivery outage necessary to connect the new pipeline to no more than 12 hours unless the State Water Board approves a longer outage based on information that the City of Yreka's ability to supply water will not be affected. Implementation of this measure will prevent the Proposed Project from significantly affecting the City of Yreka's water supply.

Mitigation Measure WSWR-2 has been incorporated into the California Public Drinking Water Management Plan and Certification Condition 8.

Conclusions

As explained above, the potential impacts of the Proposed Project on water supplies and water rights are either not significant, or are potentially significant but have been mitigated to less than significant. Therefore, based on the record and the findings above, no statement of overriding consideration is needed for this resource area.

Air Quality

Overview

The Proposed Project includes components that could have a significant effect on air quality but are necessary to accomplish the intended long-term water quality and fish passage improvements. Emissions would be generated by the Proposed Project's construction activities, which are associated with pre-dam removal activities, dam and powerhouse deconstruction, and restoration activities. Proposed Project construction activities in California would occur in Siskiyou County. Siskiyou County is located in the Northeast Plateau Air Basin (NPAB) and the Proposed Project is within the Siskiyou County Air Pollution Control District (SCAPCD). In determining the potential maximum daily emissions in the EIR, the main dam demolition phases for Iron Gate, Copco No. 1, Copco No. 2, and J.C. Boyle, were all assumed to overlap by at least one day. Activities associated with blasting would also potentially occur during each of the main dam demolition phases. Lastly, restoration of all four dams would overlap with the four dam demolitions and blasting activities. The EIS used more updated assumptions regarding timing of construction activities. (EIS, page 3-570.)

The EIR and EIS examine the potential effect of the Proposed Project on air quality. As discussed in detail in Recirculated Portions of the Draft EIR, Section 3.9, and in EIS Section 3.15.3.1 *Air Quality* the State Water Board concludes that Potential Impacts 3.9-1 (pre-dam removal activities and for ROG, CO, SO2, and PM2.5 emissions during dam removal and restoration activities), 3.9-2 (long-term), 3.9-3, and 3.9-5 will not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect on air quality is set out below.

CEQA Findings

Potential Impact 3.9-1 (dam removal and restoration activities, PM10 and NOx), EIS page 3-572

The State Water Board finds that NO_X exceedances of the Siskiyou County Air Pollution Control District emissions thresholds in Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants) would be a significant environmental impact and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).) The State Water Board finds that PM10 exceedances of the Siskiyou County Air Pollution Control District emissions thresholds in Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants) would be a significant environmental impact but that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Volume III, Attachment 2, Table RE-3.9-4 summarizes the unmitigated emissions from major construction activities associated with the Proposed Project including dam and powerhouse deconstruction, blasting, and restoration of the reservoir footprints and disturbed upland areas. Since these Proposed Project activities have the potential to overlap, their daily emissions are combined and compared to emissions thresholds in the SCAPCD's Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants).

As shown in Table RE-3.9-4, NOX and PM10 emissions exceed the threshold for the combined construction phase of dam removal, blasting, and restoration. As mentioned, these three phases were conservatively assumed to overlap in time, generating the maximum daily emissions. Project exceedances of NOX and PM10 emissions would be a significant and unavoidable impact without mitigation.

KRRC has proposed and agreed to implement the following five Air Quality (AQ) Mitigation Measures to reduce Proposed Project emissions of NOX and PM10, and FERC staff recommend incorporating them into any FERC license surrender order. (See EIS, page 3-568.).

Mitigation Measure AQ-1 - Off-Road Construction Equipment Engine Tier

For the construction activities occurring within California, any off-road construction equipment (e.g., loaders, excavators, etc.) that are 50 horsepower or greater must be equipped with engines that meet the EPA Tier 4 Final emissions standards for off-road compression-ignition (diesel) engines, unless such an engine is not available for a particular item of equipment. To the extent allowed by CARB Off-Road Diesel Fueled Fleets regulations, Tier 3 and Tier 4 interim engines will be allowed when the contractor has documented, with appropriate evidence, that no Tier 4 Final equipment or emissions equivalent retrofit equipment is available or feasible (CARB 2016c).

Documentation may consist of signed statements from at least two construction equipment rental firms.

Mitigation Measure AQ-2 - On-Road Construction Equipment Engine Model Year

Any heavy-duty on-road construction equipment must be equipped with engines that meet the model year (MY) 2010 or newer on-road emission standards.

Mitigation Measure AQ-3 - Heavy-Duty Trucks Engine Model Year

Any heavy-duty trucks used to transport materials to or from the construction sites must be equipped with engines that meet the MY 2010 or later emission standards for on-road heavy-duty engines and vehicles. Older model engines may also be used if they are retrofitted with control devices to reduce emissions to the applicable emission standards.

Mitigation Measure AQ-4 - Blasting-related Dust Control Measures

Dust control measures will be incorporated to the maximum extent feasible during blasting operations at Copco No. 1 Dam. The following control measures will be used during blasting activities as applicable: Conduct blasting on calm days to the extent feasible. Wind direction with respect to nearby residences must be considered. Design blast stemming to minimize dust and to control fly rock.

Mitigation Measure AQ-5 - General Construction Dust Control Measures

To reduce fugitive dust emissions, KRRC shall implement the following measures:

Water all exposed surfaces as appropriate to control fugitive dust through sufficient soil moisture. Under normal dry-season conditions this is generally a minimum of two times daily. Watering of exposed surfaces is not necessary when soils are already sufficiently wetted (e.g., during rain). Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

Install stabilized construction entrances where appropriate, to include geotextile fabric and/or coarse rock to manage the amount of soil tracked onto paved roadways by motor vehicle equipment, and suspended in runoff, from the active construction sites.

KRRC will include these specifications, or modifications thereto that provide comparable benefits, in its project description for approval by the Federal Energy Regulatory Commission in its license surrender order.

With the implementation of Mitigation Measures AQ-1 through AQ-5, construction emissions from the Proposed Project would not be significant for PM10. (EIS, page 3-572.) However, even with implementation of Mitigation Measures AQ-1 through AQ-5, construction emissions from the Proposed Project would still result in significant and unavoidable impacts from NOX. (EIS, page 3-572.) In addition to Mitigation Measures AQ-1 through AQ-5, Volume III, Attachment 2, Appendix N describes different or additional fugitive dust reduction measures and exhaust reduction measures that could

further reduce emissions of NOx and PM10 from the Proposed Project. FERC staff has additionally recommended that KRRC modify its Construction Management Plan to require preference to contractors using prescribed construction equipment that meets or exceeds EPA's exhaust emission standards for model year 2010 and newer heavy-duty or highway compression-ignition engines. (See FERC Staff Modification, Bullet 1.) KRRC has agreed to implement this measure. However, overseeing development and implementation of such measures does not fall within the scope of the State Water Board's water quality certification authority and the State Water Board cannot ensure their implementation. Without an enforcement mechanism, such measures cannot be deemed feasible for the purposes of CEQA.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal activities (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would still result in significant impacts during construction from NOx.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, the Lower Klamath Project dams would remain in place and no construction would occur. Therefore, no NOx emissions would be generated and there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project and No Action alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.9-2 (short-term), EIS, page 3-575

The State Water Board finds that the conflict with or obstruct with implementation of the California Regional Haze Plan is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

To comply with the USEPA Regional Haze Rule, the EIR explains that CARB developed a Regional Haze Plan (2009 Plan), which sets out a long-term path towards attaining improved visibility in Class 1 federal lands, with the goal of achieving visibility which reflects natural conditions by year 2064. The 2009 Plan identifies the pollutant emissions that contribute to impairing visibility, which include SOX, NOX, PM10, PM2.5, ROG, and ammonia (NH3).

As indicated under Volume III Attachment 2 Potential Impact 3.9-1, the Proposed Project's construction activity will generate emissions of several of these haze-causing pollutants including ROG, NOX, SOX, PM10, and PM2.5. The concentrations of haze-causing pollutants that would be emitted from the Proposed Project's construction activity have the potential to contribute to visibility impairment in the Northern California sub-region in the short-term. Due to the temporary nature of the Proposed Project's

construction activity, it is not anticipated that that the Proposed Project would produce significant concentrations of haze-causing pollutants. However, the contribution of the Proposed Project is conservatively assumed to conflict with the goals of the 2009 Plan without mitigation.

The 2009 Plan, the Regional Haze Rule requires that the state consider measures to mitigate the impacts of construction activities in their strategy for achieving their interim progress goals. In the discussion of construction activity mitigation in the 2009 Plan, it emphasizes the anticipated emissions reductions from CARB regulations for off-road vehicles and local air district regulations for controlling fugitive dust. The 2009 Plan does not recommend project-specific mitigation measures that would reduce the emission of haze-causing pollutants and provide consistency with the Plan and the interim progress goals. As discussed under Potential Impact 3.9-1, Air Quality Mitigation Measures AQ-1 through AQ-5 will be implemented for the Proposed Project to reduce the emissions of NOX and PM10. Although not specifically recommended in the 2009 Plan, these Air Quality Mitigation Measures, along with existing regulatory requirements, will ensure consistency with the 2009 Plan. Therefore, with the implementation of mitigation, the Proposed Project would not conflict with the 2009 Plan's short-term goals.

Potential Impact 3.9-4

The State Water Board finds that short-term exposure of sensitive receptors to airborne asbestos is a potentially significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

As discussed in Volume III, Attachment 2, Section 3.9.2.6 Air Quality-Toxic Air Contaminants, detectable asbestos above 0.1 percent was identified in several materials in the structures proposed for demolition (e.g., surfacing materials, thermal system insulation, and miscellaneous materials) that could become airborne during Project activities. Asbestos-related work (i.e., abatement and disposal of asbestos containing materials) would be performed by KRRC and its representatives in compliance with, as relevant, local, state, and federal regulations including California Division of Occupational Safety and those implemented by the SCAPCD (KRRC 2019cKRRC 2019a). Compliance with applicable regulations related to the handling of hazardous materials is included as **Mitigation Measure HZ-1** Hazardous Materials Management in Volume I Section 3.21 Hazards and Hazardous Materials. Implementation of this mitigation measure would reduce potential impacts to workers and the closest sensitive receptors from airborne asbestos to less than significant levels.

Statement of Overriding Considerations

As indicated above, the Proposed Project NOx emissions from construction of the Proposed Project would be a significant and unavoidable short-term impact. The

number of days of permitting exceedance are expected to be intermittent and the elevated NOx levels to be highly localized to the construction area. The Project is not expected to result in ambient air quality violations. (See EIS, pages 3-572 to 3-573.)

Additionally, the Proposed Project would provide beneficial environmental effects in other areas. For example, the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act.

The localized, intermittent and short-term nature of the NOx impact, in addition to the long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact related to NOx emissions during construction.

Conclusions

The State Water Board recognizes that the Proposed Project will result in a significant and unavoidable short-term impact from NOx construction emissions. The Proposed Project will also result in significant environmental benefits.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the short-term exceedance of NOx thresholds to be acceptable.

Greenhouse Gas Emissions and Climate Change

Overview

The Proposed Project includes components that could have a significant effect related to greenhouse gases emissions (GHGs), which can contribute to climate change, but are necessary to accomplish the intended long-term water quality and fishery improvements.

The EIR and EIS examine the potential effect of the Proposed Project related to GHG emissions and changes in energy production. As discussed in detail in Recirculated Portions of the Draft EIR, Section 3.10 and EIS, pages 3-582 to 3-583, the State Water Board does not find that indirect emissions from loss of renewable energy (Potential Impact 3.10-4 and EIS, page 3-583) are significant. Similarly, the EIR does not find that Potential Impacts 3.10-5, 3.10-6, and 3.10-7 (state plan) are significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with GHGs are set out below.

CEQA Findings

Potential Impact 3.10-1 and EIS, page 3-581

The State Water Board finds that the generation of direct GHG emissions from construction and operation of the Proposed Project is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR's discussion of Potential Impact 3.10-1 explains that on- and off-site construction equipment, construction worker commuting, and haul truck emissions would result in direct short-term construction GHG emissions. Table 3.10-10 of the Recirculated Portions of the EIR summarizes the total unmitigated emissions associated with the Proposed Project's construction-related and operational emissions. The Proposed Project would result in 20,128 MTCO2e of emissions from construction activity. As shown in Table 3.10-10, no net increase in emissions would result from operation of the hatcheries following dam removal for eight years. While exceedance of the no net increase threshold for GHG emissions from Proposed Project's construction activity would be a significant impact without mitigation, with implementation of mitigation measure ENR-1 the Proposed Project would meet the no net increase threshold and no significant impact would occur. The EIS adopted the EIR's approach on these emissions, and found the same net emissions. (EIS, pages 3-580 to 3-581.).

Mitigation Measure ENR-1, Purchase of Carbon Off-Sets, would offset all construction-related emissions from the Proposed Project, and has been incorporated into the Proposed Project.

Mitigation Measure ENR-1 – Purchase of Carbon Off-Sets: Prior to the start of pre-dam removal activities and any construction activities, the KRRC shall purchase and retire carbon offsets for the estimated 20,128 MTCO2e of construction GHG emissions that will be generated by the Proposed Project. The purchase of carbon offsets for the Proposed Project shall occur according to the following criteria:

- "Carbon Offset" shall mean an instrument issued by any of the following: CARB, Climate Action Reserve, California Air Pollution Control Officers Association, the APCD, or any other equivalent or verifiable registry.
- Any carbon offset that is used to reduce the Project's GHG emissions shall meet the requirements of CEQA Guidelines Section 15126.4(C)(3) and meet the following criteria:
    1) Real – They represent reductions actually achieved (not based on maximum permit levels).

2) Additional/surplus – They are not already planned or required by regulations or policy (i.e., not double counted).
3) Quantifiable – They are readily accounted for through process information and other reliable data.
4) Enforceable – They are acquired through legally binding commitments/agreements.
5) Validated – They are verified through the accurate means by a reliable third party.
6) Permanent – They will remain as GHG reductions in perpetuity.

Potential Impact 3.10-2, EIS page 3-581[14]

The State Water Board finds that the generation of direct GHG emissions from reservoir sediments during drawdown would be a significant environmental impact over the short-term and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that following initiation of reservoir drawdown, temporary emissions of GHGs would result from changes in reservoir sediment pore pressures due to drawdown, as well as exposure of previously submerged sediment-associated organic matter to aerobic conditions and subsequent transport of 1/3 to 2/3 of the reservoir sediment deposits through the Middle and Lower Klamath River and into the Pacific Ocean Nearshore Environment. Organic matter in remaining sediment deposits would also partially oxidize once exposed to air. The majority of the aforementioned temporary GHG emissions would occur within six months of drawdown.

As shown in Table 3.10 11 and Table 3.10 12 of the Recirculated Draft EIR, the combined temporary GHG emissions associated with reservoir sediments would be up to approximately 19,300 MTCO2e. (See also EIS, page 3-584.) Although this represents a relatively large amount of temporary emissions, it should be noted that oxidation of organic matter in land and riverine systems is part of the natural 'fast carbon cycle' that includes GHG emissions from terrestrial and aquatic ecosystems (Ciais et al. 2013) (see also Section 3.10.2 Greenhouse Gas Emissions – Greenhouse Gas Emissions and Global Climate Change). Since any amount above existing conditions would represent a net increase in GHG emissions, this would be a significant impact.

[14] The EIS declines to make a significance determination regarding the net positive GHG emissions determined to result from land use changes and sediment release, as FERC is conducting a general proceeding on assessing significance of GHG emissions. (See page 3-584.) This findings document relies on the determinations in the EIR regarding these emissions, and the EIS page citation is for the discussion of the impact, rather than the significance determination.

The potential for CH4 emissions during drawdown would not be reduced by dredging or altering the timing of drawdown, as oxidation of organic matter associated with the reservoir sediments would produce CO2 emissions as soon as the overlying reservoir water was drained and the sediments were exposed to water with higher levels of dissolved oxygen and oxygen in atmosphere. In addition, CH4 emissions may be increased if water level fluctuations continued over several years.

As noted under Potential Impact 3.10-1, the CARB Scoping Plan identifies the purchase of carbon offsets as a viable method to reduce or eliminate the impact of GHG emissions from new development (CARB 2017b). However, purchase of offsets for sediment emissions is not feasible in light of federal preemption, absent applicant agreement. While the applicant has proposed to purchase carbon credits to offset direct construction emissions, the applicant has not agreed to offset emissions generated as part of the natural 'fast carbon cycle' as opposed to anthropogenic emissions generated during fossil fuel combustion that short-circuit the 'slow' part of the carbon cycle and intensify greenhouse gas effects (see also Section 3.10.2.1 Greenhouse Gas Emissions – Greenhouse Gas Emissions and Global Climate Change). In the absence of applicant agreement, such a mitigation measure would not be enforceable, and therefore not feasible.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would generate GHG emissions and still result in significant impacts during construction, since any amount above existing conditions would represent a net increase in GHG emissions.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and would not increase GHG emissions above existing conditions. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.10-3, and EIS, page 3-582

The State Water Board finds that the generation of direct GHG emissions from conversion of the reservoir areas to riverine, wetland, and terrestrial habitat types would be a significant environmental effect and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As discussed in Potential Impact 3.10-2, the EIR explains that freshwater streams and rivers serve as large, natural sources of CO2 in regional and global carbon budgets. Riverine oxidation of organic matter to produce CO2 is part of the natural cycling of

carbon between the atmosphere and freshwater and terrestrial ecosystems. Compared to existing conditions, future GHG emissions from the Lower Klamath Project reservoirs are estimated to increase, with new emission levels ranging from approximately 34,500 to 71,500 MTCO2e annually (Volume III Attachment 2 Table 3.10 13). While the reservoir contribution to GHG production would be zero under the Proposed Project, and the increase in riparian (forest) areas in the Hydroelectric Reach would result in more carbon sequestration compared with existing conditions, the addition of restored riverine habitat would result in roughly 60 percent more annual GHG emissions from the Hydroelectric Reach area under the Proposed Project. The EIS estimates the additional increase at a somewhat lower 24,900 MTCO2e. (EIS, page 3-582.) This would be an exceedance of the no net increase threshold for GHG emissions and would be a significant impact.

As the focus of the Lower Klamath Project is to restore the Klamath River and the habitat that it provides for anadromous fish, it would not be reasonable or feasible to reduce the amount of restored riverine habitat, or to interfere with the natural processing of carbon in the river, as a means of reducing annual GHG emissions under the Proposed Project. As noted under Potential Impact 3.10-1, the CARB Scoping Plan identifies the purchase of carbon offsets as a viable method to reduce or eliminate the impact of greenhouse gas emissions (CARB 2017b). However, purchase of offsets for sediment emissions is not feasible here, in light of federal preemption. In absence of an agreement from the applicant to offset emissions, such a mitigation measure would not be enforceable, and therefore not feasible

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves conversion of the reservoir areas to riverine, wetland, or terrestrial habitat types (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would generate GHG emissions and still result in significant impacts during construction, since any amount above existing conditions would represent a net increase in GHG emissions.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and would not increase GHG emissions above existing conditions. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.10-7 (local plan)

The State Water Board finds that Proposed Project has the potential to conflict with or obstruct a local plan for renewable energy or energy efficiency would be a significant environmental impact and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR identified the County of Siskiyou General Plan Energy Element (Energy Element), which was developed in 1993, as a local plan related to renewable energy or energy efficiency. Although the Energy Element is past the planning period described in the General Plan Element (20 years), it is still relevant to assess consistency with the Energy Element for a renewable energy related project. The policies in the Energy Element encourage the development of renewable energy facilities, while minimizing potential environmental and land use effects (Siskiyou County 1993). The Energy Element is primarily forward looking and does not specifically address the removal of the Lower Klamath Project facilities or contain any policies related to maintaining such facilities. Nevertheless, Energy Element generally promotes further development of renewable energy sources in the county, and removal of an existing renewable energy source could conservatively be considered to conflict with such policies in the Energy Element. The County has confirmed this interpretation of the plan. Such a conflict cannot be feasibly mitigated. Therefore, this would be a significant and unavoidable impact.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves removal of the renewable energy source (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would conflict with the Energy Element and still result in a significant impact.

Under the Continued Operations with Fish Passage and No Project alternatives, no change to renewable energy production facilities would occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

As indicated above, the Proposed Project increases in GHG emissions from sediment release (*Potential Impact 3.10-2)* and re-establishment of a riverine system (*Potential Impact 3.10-3, and EIS, page 3-582)*, and would conflict with the local energy plan (even as it complies with state energy plans), and that these conditions result in significant impacts. (See *Potential Impacts 3.10-2; 3.10-3, and EIS, page 3-582;* and *Potential Impact 3.10-7 (local plan)*) As explained above, mitigation or avoidance of these impacts is not feasible.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to

beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to GHGs, and with conflict with the local energy plan, as described in *Potential Impacts 3.10-2; 3.10-3, and EIS, page 3-582;* and *Potential Impact 3.10-7 (local plan)*, respectively.

Conclusions

The State Water Board recognizes that the Proposed Project results in significant and unavoidable impacts from GHG emissions and from a conflict with a local energy plan. The State Water Board finds that the environmental benefits of the Proposed Project outweigh these impacts, and that they are therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Geology, Soils, and Minerals

Overview

The Proposed Project would erode sediment from reservoir deposits and transport this sediment to downstream reaches of the Klamath River. Therefore, geology and soils impact analysis in the EIR focuses primarily on the geology and geomorphology of the reservoir, channel, and floodplain environments directly and indirectly affected by dam removal and the associated release of stored sediment to downstream reaches of the Klamath River. The EIR and EIS examine the potential effect of the Proposed Project on changes to geologic hazards, soil disturbance, hillslope instability, instability of embankments, sediment deposition, changes in sediment supply, bank erosion, and the availability of mineral resources. As discussed in detail in EIR Volume Section 3.11 Geology, Soils, and Minerals, the State Water Board concludes that Potential Impacts 3.11-1, and 3.11-2, slope instability from reservoir drawdown at Iron Gate, Copco 2, and J.C. Boyle reservoirs (EIS, section 3.1.3.1 and Potential Impact 3.11-3 (Iron Gate Reservoir and J.C. Boyle Reservoir)), and Potential Impacts 3.11-4, 3.11-6, and 3.11-7 would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project on Geology, Soils and Minerals include long-term effects of increasing sediment supply and transport and creating a more dynamic and mobile bed downstream of Iron Gate Dam.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with geology, soils, and minerals are set out below.

CEQA Findings

Potential Impact 3.11-3 (Copco No. 1 Reservoir) and EIS Section 3.1.3.1 (Copco No. 1 Reservoir), page 4-1

The State Water Board finds that Copco No. 1 reservoir drawdown could result in hillslope instability in reservoir rim areas and this would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The geologic assessment and slope stability analysis conducted by KRRC (Volume II Appendix B: Definite Plan – Appendix E) indicated that certain segments around Copco No. 1 Reservoir have a potential for slope failure that could impact existing roads and/or private property (Volume III Attachment 1 Figure 3.11-10). These areas include approximately 1,780 linear feet of shore-parallel length with potential for failures to impact existing structures outside the reservoir rim. These areas include approximately 430-480 linear feet of slopes along Copco Road (north shore segment S11) and approximately 1,300 to 1,350 linear feet of slope adjacent to private property (south shore segments S5, S11a, and S12a). Twelve to seventeen parcels in these areas could potentially be impacted. Four habitable structures are located in the areas along the south shore, with an additional four habitable structures at risk from progressive failures outside of those areas. Additional parcels and structures may experience damage and/or deformation due to nearby failure (Volume III. Attachment 1. pages AT1-732-AT1-733; EIS, page 3-11).

As part of the Proposed Project, KRRC includes consideration of multiple actions to offset potential impacts in reservoir rim areas where there is a high probability of slope failure. (California Slope Stability Monitoring Plan; EIS, pages 3-9 to 3-10; Appendix B: Definite Plan – Appendix E).

While the proposed actions are designed to reduce potential slope stability impacts, the proposed actions do not explicitly address potential impacts resulting from hillslope instability outside of those areas identified as having a high probability of slope failure or commit KRRC to implementation of their aforementioned proposed actions. Therefore, the impact of the project on hillslope instability in reservoir rim areas would be significant. However, implementation of Mitigation Measure GEO-1 would reduce the impact of slope failure in reservoir areas to less than significant.

Mitigation Measure GEO-1 − Slope Stabilization

Prior to the start of reservoir drawdown, KRRC shall offer to temporarily relocate or otherwise assist residents who reside on potentially unstable slopes on the south shore of Copco Lake, and residents on the north shore of Copco Lake whose residences may be affected by slope failures during the drawdown of the reservoir, if testing and analysis undertaken by KRRC indicates that potential slope failures and/or structural

impacts related to Project activities could occur in these locations. Potentially unstable slopes currently include those listed in Appendix B: *Definite Plan – Appendix E*. Prior to reservoir drawdown, KRRC shall reroute or take other appropriate action to maintain safe conditions on Copco Road (currently includes the potential areas listed in Appendix B: *Definite Plan – Appendix E*) if testing and analysis undertaken by KRRC indicates that potential slope failures related to Project activities could affect the road.

KRRC will monitor potentially unstable areas along the Copco No. 1 Reservoir rim for the duration of reservoir drawdown and for two weeks, or longer if KRRC determines that a longer monitoring period is prudent, after the drawdown is complete. Monitoring may include inclinometers, surveys, vibrating wire piezometers, and visual inspections. Depending on the location, monitoring may involve tribal monitors (see also Mitigation Measures TCR-1, TCR-2, and TCR-3). If slope failure related to Project activities is observed, an exclusion zone will be established around the unstable area and the KRRC will monitor the unstable area.

Throughout drawdown activities, and when the areas are safe to inspect, the KRRC shall inspect any Project-related slope failures that occurred during and following drawdown, and implement slope stabilization measures, as appropriate. For any slope failure related to Project activities that occurs during drawdown or the year following drawdown and that adversely impacts a structure or public facility or impacts or has a material potential to impact water quality or volitional fish passage, KRRC will fund or implement the following actions:

1. By agreement with the property owner, repair or move affected structures and/or purchase affected property; or
2. Repair and/or re-align affected road segments; or
3. Regrade and/or engineer structural slope improvements (e.g., retaining walls, buttresses, drilled shafts or other structural elements that could be installed to resist slope movement); and
4. Revegetate affected areas to the extent revegetation is feasible and appropriate.

These elements are included in Condition 18 of the water quality certification, and Section 5.0 of the California Slope Stability Monitoring Plan at pages 10-11.

Potential Impact 3.11-5 and EIS pages 3-17 to 3-19

The State Water Board finds that the Proposed Project would result in a significant impact associated with reservoir drawdown resulting in substantial short-term to long-term sediment mobilization and deposition in the Middle Klamath River from Iron Gate Dam to confluence with Cottonwood Creek due to erosion of reservoir sediment deposits, particularly in flood events, and a long-term change in sediment supply and

transport due to dam removal. The State Water Board finds that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

Prior to changes in the drawdown schedule adopted after the 2020 EIR, Short-term (2-year) SRH-1D model simulations focused on reservoir sediment erosion and fine sediment load in the Klamath River following drawdown indicated up to about 0.9 feet of reach-averaged sediment deposition between Bogus Creek and Willow Creek (RM 188.0) (Volume III Attachment 1 Figure 3.11-15), although conservative long-term (50-year) simulations focused on channel bed elevation change indicate that fine and coarse sediment deposition within 2 years of dam removal may be up to 1.7 feet (Volume III Attachment 1 Figure 3.11-18) (USBR 2012). Short-term simulations also indicate up to about 0.4 feet of sediment deposition from Willow Creek to Cottonwood Creek (Volume III Attachment 1 Figure 3.11-15), although conservative long-term (50-year) simulations indicate that fine and coarse sediment deposition within 2 years of dam removal may be up to 0.9 feet (Volume III Attachment 1 Figure 3.11-18) (USBR 2012). Model simulations indicate that reaches located farther downstream will change little (< 0.5 feet of erosion or deposition) (Volume III Attachment 1 Figure 3.11-15; Figure 3.11-18) (USBR 2012). Any fine sediment that does deposit on the channel bed in the short-term would be transient and subject to remobilization. Smaller quantities of coarse sediment would be less transient, as discussed below in relation long-term sedimentation. Eight miles of the Klamath River mainstem channel from Iron Gate Dam to Cottonwood Creek could potentially be affected by significant short-term sediment deposition released upon dam removal, representing 4 percent of the total mainstem channel length downstream of Iron Gate Dam (190 miles) (Volume III Attachment 1 pages AT1-745 to AT1-748).

Long-term (50-year) SRH-1D model simulations also indicate that 0.8 to 1.7 feet of aggradation could result from the Proposed Project between Iron Gate Dam and Cottonwood Creek (i.e., simulations based on a median start year).

These findings have not changed significantly despite the changes in drawdown schedule. (EIS, pages 3-17 to 3-18).

As discussed above in *Potential Impact 3.2-3,* there is no feasible mitigation to reduce the sediment releases of the Proposed Project.

Analysis of potential alternatives to the Proposed Project shows that mobilization of reservoir sediment deposits in the much larger Copco No. 1 and Iron Gate reservoirs would still occur under the Partial Removal, Two Dam Removal, Three Dam Removal, and No Hatchery alternatives. Thus, compared with the Proposed Project, the same degree of mobilization of Lower Klamath Project reservoir sediment deposits would occur under these alternatives.

Under the Continued Operations with Fish Passage and No Project alternatives, dam removal and associated mobilization of reservoir sediment deposits would not occur. Therefore, no sediment impacts would occur under these alternatives. However, these

alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.11-5, EIS, pages 3-17 to 3-19

As indicated above the Proposed Project would result in a significant and unavoidable short-term to long-term Geology Soils and Minerals impact of sediment deposition in the Middle Klamath River from Iron Gate Dam to the confluence with Cottonwood Creek due to erosion of reservoir sediment deposits, particularly during flood events. The Proposed Project would also result in a Geology, Soils and Minerals long-term benefit of increasing sediment supply and transport and creating a more dynamic and mobile bed downstream of Iron Gate Dam. This long-term benefit to the reach below Iron Gate Dam outweighs the short-term impact of sediment deposition in the reach.

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause short-term, significant and unmitigable impacts from sediment deposition in the reach from Iron Gate Dam to Cottonwood Creek. The State Water Board further notes the anticipated long-term benefit of the Proposed Project on sediment transport in the reach below Iron Gate Dam. The State Water Board finds that the long-term improvements in sediment transport outweigh the significant and unmitigable short-term to long-term impact of deposition, and that the impact is therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Historical Resources and Tribal Cultural Resources

Overview

The EIR and EIS examine the potential effect of the Proposed Project on historic and tribal cultural resources. As discussed in detail in Section 3.12 Historical Resources and Tribal Cultural Resources and EIS, Section 3.10 Cultural Resources, the State Water Board concludes that Potential Impacts 3.12-3 (Hydroelectric Reach between J.C. Boyle Dam and Copco No. 1 Reservoir; Hydroelectric Reach between J.C. Boyle Dam and Copco No. 1 Reservoir) 3.12-9, 3.12-10, and 3.12-14 (except for Middle Klamath River from Iron Gate Dam to Humbug Creek)) would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project include long-term beneficial effects on the Klamath River fishery of predicted increases in fish production and health from dam removal and the long-term

benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey) resulting from improved river ecosystem function and increased habitat access; and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs (See also EIS 3-506).

CEQA findings and statements of overriding considerations for the remaining potentially significant effects on historic and tribal cultural resources are set out below.

CEQA Findings

Potential Impact 3.12-1, EIS Section 3.10.3.1, page 3-485[15]

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that tribal cultural resources are known to be present within Area of Analysis Subarea 1 (Volume III, Figure 3.12 2).

Due to the nature of ground-disturbing activities and a general increase in the level of activity (e.g., construction, surveys) within the Area of Analysis Subarea 1, pre-dam removal activities that would involve ground disturbance have the potential to result in the following significant impacts to known TCRs identified in Confidential Appendices P and Q, as well as unknown TCRs (EIR, page 3-817; see also EIS, page 3-484):

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the TCR would be materially impaired; and/or
- Exposure or substantial movement of TCRs leading to increased access and looting above levels occurring under existing conditions.

[15] EIS Section 3.10.3.1 evaluates various impacts to all archaeological resources, including archaeological resources that are tribal cultural resources and those that are related to non-tribal history. This Findings document maintains the impact analysis structure of the EIR, which includes more separation as to the type of activity causing the impact and also separates tribal cultural resources (which can be historic or prehistoric) from historical resources. The analyses incorporate updated information and analysis from the EIS as appropriate.

Note that TCR sites located within the reservoir fluctuation zones (Confidential Appendices P and Q) may be periodically at risk of looting during low water periods under existing conditions and may have suffered significant degradation in the existing condition (EIR, page 3-818).

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This "Phase II" evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO stated that seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.).

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCPs included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including by construction and disposal activities and by increased access.

Implementation of mitigation measures TCR-1 (TCRMP), TCR-2 (LVPP), TCR-3 (IDP), TCR-4 (Endowment) would reduce these impacts considerably, and, for many resources is expected to avoid impacts completely, through the design and implementation of construction plans to completely avoid impacts, or on-the-ground modifications to Proposed Project implementation to avoid impacts (EIR, page 3-818).

In light of the high density of TCRs within the Limits of Work, and the nature of the construction involved, significant risk remains that other TCRs may sustain damage that results in a material impairment of the resource's significance. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, and the likelihood of significantly impairing other types of TCRs in light of the type of construction actions and the density of resources, the impact would remain significant and unavoidable (EIR, page 3-818; EIS, page 3-485).

Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan

The KRRC shall develop a Historic Properties Management Plan (HPMP). The HPMP shall include measures to avoid, minimize, or mitigate the Project's adverse impacts to TCRs. The HPMP shall include a Tribal Cultural Resources Management Program (TCRMP), which will state such measures.

KRRC shall develop the TCRMP in consultation with Affected Tribes. The KRRC shall finalize the HPMP during FERC's hearing on the license surrender application for the Project. The KRRC shall propose the HPMP for FERC's approval as a term of the license surrender order.

In developing the TCRMP, KRRC shall engage in good faith consultation with the Affected Tribes that are traditionally and culturally affiliated with a specific portion of the APE or with potentially affected TCRs. Where a particular tribe has identified a specific TCR, the primary consultation about that TCR shall be with the affected tribe. All such consultation shall be subject to the schedule for HPMP development. If consensus cannot be reached during TCRMP development, KRRC shall record the disputed issues, positions on the disputed issues, and KRRC's proposed resolution, in the HPMP that is submitted to FERC.

The TCRMP shall include the following elements consistent with applicable law:

1. The TCRMP shall include an inventory of known and potential TCRs that could be affected by the Project. Appendix B: Definite Plan – Appendix L includes a preliminary inventory of such resources. KRRC will continue to develop the inventory through the consultation process for the license surrender application under authority of the National Historic Preservation Act (NHPA) Section 106.

   Based on AB 52 consultation, KRRC acknowledges that the Shasta Indian Nation and Shasta Nation are primarily concerned with TCRs associated with Iron Gate, Copco No. 1, and Copco No. 2 reservoirs, and tributary sub-watersheds such as Fall Creek, Bogus Creek, and Deer Creek. The TCRMP shall include TCRs known to the Shasta Indian Nation, which include TCRs as reflected in PacifiCorp (2004) and Daniels (2006) and as updated by Attachment 4 of the Confidential Appendix Q. The TCRMP shall include TCRs known to the Shasta Nation, which include the TCRs identified in the Confidential Appendix P. The TCRMP shall include TCRs known to other Affected Tribes.

2. The TCRMP shall include provisions to protect the confidentiality of known TCRs. The TCRMP shall also include provisions to share information collected by the KRRC with: Affected Tribes that are traditionally and culturally affiliated with the known TCR(s); regulatory agencies that have authority over protecting such resources, as necessary; or as necessary with the permission of such tribes in order to implement appropriate protective or enhancement measures. These provisions will be consistent with California Public Resources Code Section 21082.3(c).

3. The TCRMP shall assure that the Project will avoid, minimize, or mitigate adverse impacts to TCRs, consistent with California Public Resources Code section 21084.3(a). In developing the plan, the KRRC will consider measures listed in California Public Resources Code section 21084.3(b) that, if feasible, may be appropriate to avoid, minimize, or mitigate adverse impacts:

   (1) "Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open

space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places in a manner consistent with the KHSA.

(4) Protecting the resource."

4. The TCRMP shall require a training program for KRRC's field personnel associated with the Project. The training program will be designed to train KRRC field personnel to work collaboratively with tribal monitors and will focus on field procedures (across the range of field personnel) as necessary for appropriate and respectful treatment of TCRs; and will be intensive and systematic, in light of the scale, complexity, and schedule of the Project undertakings.

5. The TCRMP shall identify TCR areas that will have limited or no public access during Project implementation. During that period, the KRRC shall: install adequate signage to clearly mark areas with limited or no public access areas; install fencing where necessary and feasible to reduce access; and provide appropriate training to field personnel. Upon the recommendation of a tribe that has identified the TCR area, the KRRC may consider, and the TCRMP may include, other equally effective measures to reduce public access in lieu of (or in addition to) those identified immediately above.

6. The TCRMP shall include site-specific mitigation measures for potentially affected TCRs. The TCRMP shall provide for ongoing consultation or site-specific mitigation refinement with the relevant Affected Tribe(s) with a traditional and cultural affiliation to an impacted TCRs, as appropriate and feasible consistent with the schedule for Project implementation.

7. The TCRMP shall identify any areas where the KRRC, before Project implementation, shall conduct any additional cultural resource surveys, consistent with California Public Resources Code section 21074.

8. The TCRMP shall provide that the KRRC, following reservoir drawdown and dam removal, shall undertake intensive surveys of TCRs, archaeological, and other historical resources within the area of analysis, using joint teams of

archaeologists and tribal monitors. The TCRMP shall specify the methods for such surveys. It shall also specify the process by which Affected Tribes will nominate, and KRRC will select and compensate tribal monitors. During this process, an Affected Tribe that is traditionally and culturally affiliated with the area may nominate tribal monitor(s) for KRRC's consideration; and KRRC shall make the selection after consultation with Affected Tribes. KRRC shall select and pay tribal monitor(s) for the purpose of Project implementation. In the event that KRRC does not select a tribe's recommended monitor, an Affected Tribe that is traditionally and culturally affiliated with the area may request participation of its recommended tribal monitor in these surveys at its own cost. KRRC's field personnel, in consultation with tribal monitors, shall record these surveys in a manner consistent with applicable law. KRRC shall provide recorded survey data pertaining to a known TCR to the Affected Tribes that are traditionally and culturally affiliated with that TCR.

9. The TCRMP shall state a range of appropriate measures, and a protocol to select from such range, to address the disturbance or exposure of known TCRs during Project implementation. The KRRC shall implement measures necessary to ensure the protection of disturbed or exposed TCRs.

10. The TCRMP shall provide that the KRRC will identify and avoid TCRs during the siting and construction of new recreational sites, to the extent feasible. The KRRC shall address potential conflicts consistent with California Public Resources Code section 21084.3(a) and (b).

11. The TCRMP shall provide for restoration actions associated with any ground disturbances such as grading and manual or machine excavation, so as to protect TCRs. The KRRC shall consider limiting or completely avoiding mechanical weed control activities (e.g., mowing, hand-weeding) or herbicide use to protect TCRs in areas identified by Affected Tribes, as necessary. In revegetation efforts, the KRRC shall incorporate specific plant species that are important to Affected Tribes with a traditional and cultural affiliation to the area at issue, to the extent that doing so is feasible and complies with the requirements of the federal and state approvals of the Project. The KRRC shall provide training regarding these actions to its field personnel.

12. The TCRMP shall incorporate the results of the KRRC's Bathymetric Survey, and specifically, the refined understanding of sediment thickness in Iron Gate and Copco No. 1 reservoirs, to inform monitoring efforts for potential exposure of TCRs during and following reservoir drawdown. Information from this review shall inform the Inadvertent Discovery Program (described below), which will be part of the TCRMP.

13. The KRRC shall consult with Affected Tribes in the planning process for the redesign and relocation of the water supply line for the City of Yreka to identify,

avoid if feasible, or mitigate effects to TCRs during the siting and construction of the water supply line. The KRRC shall address potential conflicts consistent with California Public Resources Code section 21084.3 (a) and (b).

14. Consistent with KHSA Section 7.6.6, the TCRMP shall include recommended measures to identify, avoid, minimize, or mitigate effects to TCRs during modifications of Iron Gate Hatchery, consistent with California Public Resources Code section 21084.3 (a) and (b).

15. Consistent with KHSA Section 7.6.6, the TCRMP shall also include recommended measures to identify, avoid, minimize, or mitigate adverse impacts to TCRs during rehabilitation and expansion of Fall Creek Hatchery, consistent with California Public Resources Code section 21084.3 (a) and (b).

16. The TCRMP shall include a dispute resolution process in the event that, during Project implementation, Affected Tribes dispute which measures to apply to avoid, minimize, or mitigate the Project's adverse impacts to a specific TCR with which the Affected Tribes are traditionally and culturally affiliated. The process shall include neutral mediation to be undertaken consistent with the schedule for Project implementation. In consultation with Affected Tribes, the KRRC shall engage a standing mediator who is available to resolve disputes about which measures to apply (EIR, pages 3-818 – 3-821).

Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program

In consultation with Affected Tribes and jurisdictional law enforcement, the KRRC shall develop and implement a Looting and Vandalism Prevention Program (LVPP), specifically to deter looting and vandalism to TCRs associated with the Project. The LVPP, which may be part of the TCRMP, shall include the following elements consistent with applicable law:

1. The LVPP shall include appropriate measures to deter looting and vandalism during Project Implementation. The KRRC shall implement these measures for a minimum of 3 years following completion of dam removal, or until KRRC has transferred applicable Parcel B lands to the States or third parties under the terms of the KHSA Section 7.6.4.

2. The LVPP shall specify the frequency of monitoring efforts of known TCR areas and other areas subsequently identified by the KRRC or tribal monitors during Project implementation. Monitoring frequency shall not be less than quarterly, with allowances for additional targeted monitoring that is triggered by natural or opportunistic events, such as a large magnitude flood event. The LVPP shall provide that monitoring need and frequency will vary depending on the level of risk associated with various activities during Project implementation.

3. The LVPP shall include a training program on looting and vandalism prevention and site documentation, for the benefit of KRRC's field personnel as well as tribal monitors.

4. The LVPP shall include protocols for communications and reporting to law enforcement and other relevant state and federal agencies, consistent with applicable law.

5. The LVPP shall include appropriate measures to restrict public access to specific Project areas where known TCRs, or those identified through inadvertent discovery, are located. KRRC shall implement these measures until it has transferred the Parcel B lands to the states or third parties under KHSA Section 7.6.4. Specific measures to be considered shall include: fencing; posting of signs; strategic plantings; strategic routing of access roads, boating access points and trails; specific recommendations for land use or land transfer in the KHSA Section 7.6.4 process or other means determined necessary and feasible to protect TCRs from opportunistic looting and public access (authorized and unauthorized).

6. The LVPP shall include appropriate measures to prevent or restrict public access to reservoir areas during reservoir drawdown and dam removal.

7. The LVPP shall include appropriate measures to prevent or restrict public access to newly exposed reservoir areas following reservoir drawdown. Such measures shall limit use of off-road vehicle paths and informal roads and tracks, and unauthorized use of developed and dispersed recreation sites. KRRC shall implement these measures until it transfers Parcel B lands to the states or third parties pursuant to KHSA Section 7.6.4, subject to an assignment of continuing responsibilities by the transferee (EIR, pages 3-821 – 3-822).

Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan (IDP)

In consultation with Affected Tribes, the KRRC shall develop and implement an Inadvertent Discovery Program (IDP), which shall be a part of the TCRMP. The IDP shall establish protocols for the discovery of unanticipated or previously unknown TCRs, including human burials or human remains discovered during Project implementation. The IDP shall provide for compliance with applicable law regarding cultural resources and human remains; state work site protocols to be followed in the event of an inadvertent discovery; and identify appropriate point of contacts associated with the protocols. The IDP shall include protocols for work in areas known to have a high chance of inadvertent discoveries, including the Iron Gate, Copco No. 1, Copco No. 2 reservoir areas, as well as the altered FEMA 100-year floodplain area between Iron Gate Dam and Humbug Creek following dam decommissioning.

The IDP shall include the following specific elements:

1. The IDP shall acknowledge that there may be unknown TCRs in association with TCRs known to the Shasta Indian Nation, which include TCRs as reflected in PacifiCorp (2004) and Daniels (2006) and as updated by Confidential Attachment 4 of the Confidential Appendix Q.

2. The IDP shall state protocols that KRRC shall implement for sites that are addressed under California Public Resources Code 5097.993 and/or for sites found to contain TCRs, human burials, or human remains during and after drawdown activities. These protocols shall identify appropriate agency and tribal contacts for such situations. In the case of human remains in California, the KRRC shall also notify the county coroner and follow the procedures stated in California Health and Safety Code section 7050.5(b) to the extent feasible. Upon discovery, the KRRC's environmental monitor shall notify the KRRC's qualified archaeologist of the discovery, and the KRRC's qualified archaeologist shall complete a letter report to assess and document the discovery. The KRRC shall circulate the letter report to Affected Tribes, the Native American Heritage Commission for inadvertent discoveries on private and state lands in California, and other appropriate land management agencies, within 72 hours of the discovery.

3. The IDP shall state protocols that KRRC will implement for reservoir drawdown or restoration activities following an inadvertent discovery. Such protocols shall be consistent with the Definite Plan and shall take into account potential downstream environmental impacts; cultural resource impacts in the Iron Gate, Copco No. 1, Copco No. 2 reservoir areas; mitigation and stabilization for tribal and cultural resources found in the APE outside of the reservoirs; and mitigation in the altered FEMA 100-year floodplain area between Iron Gate Dam and Humbug Creek following dam decommissioning. The IDP shall identify the measures that the KRRC will follow to protect TCRs following an inadvertent discovery.

4. The IDP shall provide for tribal monitors to participate in monitoring during Project implementation. The tribal monitors shall be present as feasible and appropriate pursuant to the schedule for different phases of Project implementation, to address unknown TCRs that are exposed. Pursuant to item (6), the monitoring schedule for tribal monitors shall consider that monitoring frequency and duration may differ by geographic area or Project phase or activity.

5. The IDP shall provide for the development and implementation of a training program regarding the inadvertent discovery of cultural resources and human remains during Project activities. All of KRRC's field personnel and tribal

monitors shall be instructed on site discovery, avoidance, and protection measures, including information on the statutes protecting cultural resources.

6. The IDP shall establish the frequency of specific monitoring efforts during Project implementation in identified areas where the discovery of unidentified TCRs may be likely given currently available information and other known archaeologically or culturally sensitive areas that may be identified by the tribal monitors. Monitoring locations will be specified during the development of the Inadvertent Discovery Program in the HPMP. Monitoring frequency during Project activities that cause ground disturbance shall not be less than quarterly, with allowances for additional targeted monitoring that is triggered by natural or opportunistic events during the reservoir drawdown or a subsequent large magnitude flood event. Such monitoring efforts shall be led by KRRC's archaeologists in consultation with tribal monitors and shall include the field reconnaissance of newly exposed sediments for surface features, to include, but not be limited to intensive, pedestrian survey for areas with relatively low slopes (<30 percent) and that are sufficiently dried to permit for safe access for pedestrian survey and to permit safe access for survey vehicles. In areas where intensive, pedestrian survey is not possible, KRRC in consultation with tribal monitors may use low-elevation aerial survey methods (e.g., unmanned aerial vehicles) or barge surveys to accomplish monitoring.

7. The IDP shall include a timeline, in consultation with Affected Tribes, for completing treatment measures and assessing California Register significance for discovered cultural resources and human burials or remains.

8. The IDP shall include dispute resolution procedures in the event that Affected Tribes disagree on which measures to apply to protect TCRs following inadvertent discovery. When the inadvertent discovery occurs on private or state lands in California, the procedures set forth in California Public Resources Code section 5097.98 will be followed where feasible, including mediation pursuant to California Public Resources Code section 5097.94. To the extent that inadvertent discoveries occur on federal or tribal lands, appropriate procedures under tribal or federal law will apply (EIR, pages 3-822 – 3-824).

Mitigation Measure TCR-4 − Endowment for Post-Project Implementation

The TCRMP shall include a provision for the KRRC to provide funding for an endowment or other appropriate organization (e.g., a non-profit mutual benefit organization) to protect and enhance TCRs that are exposed due to the Project implementation on state and private lands in California, on a long-term basis following license surrender. This endowment shall include funding for monitoring, including supplementing or enhancing law enforcement resources, and shall also be available to cover measures that will be implemented following license surrender, including measures related to looting and vandalism protections. The endowment shall be

governed in a manner that is representative of Affected Tribes that are traditionally and culturally affiliated with the TCRs impacted by Project Implementation. The KRRC shall consult with Affected Tribes, with the assistance of the standing mediator during development of the TCRMP, to develop the specifications for funding and governance (EIR, page 3-824).

Additionally, in October 2022, the Advisory Council on Historic Preservation (ACHP), California State Historic Preservation Officer (California SHPO), Oregon State Historic Preservation Officer (Oregon SHPO), and FERC executed a Programmatic Agreement that requires, upon issuance of the license surrender order, the Licensee will implement the HPMP as finalized in October 2022. On October 14, 2022, the KRRC filed its final Historic Properties Management Plan (HPMP) which describes the measures that the KRRC will implement to identify and resolve (avoid, minimize, or mitigate) adverse effects to historic properties that may result from the Proposed Action. The HPMP includes the TCR mitigation measures which the KRRC has committed to implement in Appendix G of the HPMP. The HPMP also includes the recommended FERC Staff Recommended Measure, Bullet 11, which reads:Prepare a revised HPMP in consultation with the Oregon State Historic Preservation Officer (SHPO), California SHPO, participating Tribes, and other appropriate agencies and organizations to address the following: (1) further clarification regarding the resolution of adverse effects on specific archaeological sites, including but not limited to the decision-making process regarding site treatment; (2) a discussion of TCRs 5-8 identified in the California Water Board's April 9, 2020, EIR, including the potential effects on archaeological resources and TCPs on Parcel B lands; and (3) inclusion of the comments, recommendations, and section 106 determinations received from the Oregon SHPO, California SHPO, Advisory Council, and the licensee's response to those comments.

The HPMP satisfies TCR-1, and it includes the Looting and Vandalism Prevention Plan (LVPP) required under TCR-2 and the Monitoring and Inadvertent Discovery Plan (MIDP) required under TCR-3. Additionally, the KRRC has provided funding for an endowment under TCR-4.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts on known Tribal Cultural Resources as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no short-term impacts on known Tribal Cultural Resources. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-2, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown, previously submerged Tribal Cultural Resources due to shifting, erosion, and exposure associated with drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs, Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the increased likelihood of impacts to known or as-yet unknown previously submerged TCRs due to drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs would be a significant impact in light of the following:

- Increased potential for shifting, erosion, and/or exposure of TCRs that results in destruction or material alteration of the resources in a way that would undermine current or historical significance, in light of an existing condition in which the TCRs are under water.
- The large number of known TCRs, and the high potential for the presence of as-yet unknown TCRs, that are currently submerged by Copco No.1, Copco No. 2, and/or Iron Gate reservoirs.

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This "Phase II" evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO stated that two of these were and seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.). A final determination on SHPO concurrence on the remining items is anticipated in February 2023.

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCRs included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including by reservoir drawdown.

Implementation of the HPMP, including Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), and TCR-3 (IDP), and of Mitigation Measure TCR-4 (Endowment) (as described above under Potential Impact 3.12-1) would reduce these impacts considerably, and, for many resources is expected to avoid impacts completely or to reduce the impact to less than significant. While drawdown is not generally anticipated to have large effects on material below the earth's surface at the time of reservoir inundation, where slumping is a risk and where so many sites are involved (including some sites that have been subject to wave action with an erosive effect) material risk remains that some burials may be affected. While treating remains and associated funerary objects with the appropriate respect and procedures can reduce and avoid compounding the harm from the initial exposure or movement, it cannot do so fully. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, the impacts would remain significant and unavoidable (EIR, page 3-827; EIS, page 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to known or unknown, previously submerged Tribal Cultural Resources associated with drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, there would be no impacts to known or unknown, previously submerged Tribal Cultural Resources since reservoir drawdown would not occur. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-3 (Middle Klamath River from Iron Gate Dam to Humbug Creek), EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could result in minor alterations to the

FEMA 100-year floodplain inundation area downstream of Iron Gate Dam, along the 18-river mile stretch of the Middle Klamath River between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012c). Changes in the extent of the floodplain inundation area in Area of Analysis Subarea 2 (Figure 3.12 3) could increase the risk of flood damage to TCRs that are not currently located within the FEMA 100-year floodplain but would be following dam removal, where flood damage could involve physical destruction or relocation of TCRs such that the significance of the TCR would be materially impaired. This would be a significant impact in the short term and long term. Implementation of the HPMP, which includes the requirements of TCR-1, TCR-2, and TCR-3, would reduce impacts, although for the reasons described in Potential Impact 3.12-1, the impacts would remain significant and unavoidable. (EIR, pages 3-830 – 3-831; EIS, page 3-485.)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek.

Under the Continued Operations with Fish Passage, No Action, and No Project alternatives, there would be no impacts to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and No Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-3 (Yurok Reservation (approximately RM 0 to RM 45) along Lower Klamath River and Klamath River Estuary)

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources located Yurok Reservation (approximately RM 0 to RM 45) along Lower Klamath River and Klamath River Estuary due to erosion or flood disturbance associated with reservoir drawdown, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that there is the potential for the morphology of the Klamath River Estuary to change in light of sediment releases from the drawdown of the reservoirs (see Potential Impact 3.2-3). These changes to the estuary have a low-risk potential to affect estuary-based Yurok Tribe TCRs; however, there is some risk of potential impacts that would not occur absent implementation of the Proposed Project. The Yurok Tribe has adopted ordinances and policies to address impacts to cultural resources on the Yurok Reservation, which includes the Klamath River Estuary. In the unlikely event that

such Proposed Project-related impacts would occur to resources in the area of the Klamath River Estuary, implementation of Mitigation Measure TCR-5 would reduce the potential impacts to less than significant (EIR, page 3-831).

Mitigation Measure TCR-5 − Implementation on Yurok Reservation

Mitigation Measures TCR-1, TCR-2, and TCR-3 do not apply on the Yurok Reservation. The Yurok Tribe's Cultural Resource Ordinance and Inadvertent Discovery Policy shall apply to such TCRs on the Yurok Reservation (EIR, page 3-831).

Appendix G to the Final HPMP explains that the KRRC will comply with Mitigation Measure TCR-5, in the event of an impact from the Proposed Project.

Potential Impact 3.12-4, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that direct physical disturbance associated with blasting and other removal techniques could significantly impact those TCR sites that directly overlap with the blasting locations. The KRRC proposes complete removal of dam facilities, including, in some instances, excavation of concrete below the existing streambed level, in order to prevent future development of fish barriers as the river morphology changes. Removal of the concrete dam structures would require blasting and drilling which could destroy, relocate, or alter those TCRs sites that directly overlap with the blasting locations or their immediate surroundings such that the significance of these TCRs would be materially impaired (EIR, page 3-832).

There is at least one TCR that was present at Copco No. 1 before dam construction that would be potentially impacted. It is unknown the extent to which the resource survives currently as it is no longer accessible. To the extent the site still exists, removal of the dam has a high likelihood of significantly degrading the site. There is also the potential for as-yet unknown sites to be impacted within the blasting zone, or by other techniques associated with the removal of these features, in light of the density of sites in the Hydroelectric Reach (EIR, page 3-832).

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCRs included the Kikaceki District Traditional Cultural Property would be

potentially adversely affected under the Proposed Project, including by removal of the hydroelectric facilities. (EIS, page 3-487.)

Implementation of the HPMP, which includes mitigation measures TCR-1 (TCRMP), TCR-2 (LVPP),TCR-3 (IDP), and TCR-4 (Endowment) (as discussed above under Potential Impact 3.12-1) would reduce impacts to TCRs associated with dam removal activities, but impacts would remain significant and unavoidable (EIR, page 3-832, EIS, page 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with dam removal.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other construction techniques, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known or unknown Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action alternatives, there would be no construction that would have an impact to known or unknown Tribal Cultural Resources. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-5, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that ground disturbance associated with Proposed Project reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction and ongoing road and recreation site maintenance during operation could physically disturb known Tribal Cultural Resources and result in a significant impact. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board

further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that within the reservoir footprint portions of the Area of Analysis Subarea 1, numerous TCR sites have been identified. Additionally, there may be many as-yet unknown TCRs located within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs. Artifacts within the reservoir footprint may be materially impaired through physical demolition, destruction, relocation, or alteration by construction equipment (e.g., tilling) or hand tools (e.g., shovels for planting trees) during the reservoir restoration activities of riparian, floodplain, and wetland habitat within former reservoir areas and upland areas, as well as ongoing road maintenance and potential recreation site construction and maintenance, if any (EIR, page 3-832).

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This “Phase II” evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO stated that two of these were and seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.) A final determination on SHPO concurrence regarding the additional sites is scheduled to occur by February 2023.

Although the Proposed Project’s impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCRs included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including by habitat restoration. (EIS, page 3-487.)

Implementation of the HPMP, which includes Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), and TCR-3 (IDP), as well as implementation of TCR-4 (Endowment) (as discussed in Potential Impact 3.12-1)would reduce these impacts considerably, and, for most resources is expected to avoid impacts completely, through designing restoration plans to completely avoid impacts, or by on-the-ground changes to implementation to avoid impacts. In light of the high density of TCRs in the restoration areas, and because some of the contemplated restoration involves significant earth-moving with heavy equipment, such as potentially regrading areas and enhancing wetlands, significant risk remains that other TCRs may sustain damage that results in a martial impairment of the resource’s significance. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, and the likelihood of significantly impairing other resources in light of the type of construction actions and the density of resources, the impact would remain significant and unavoidable (EIR, pages 3-834 – 3-835; EIS, page 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar ground disturbance impacts that could physically disturb known Tribal Cultural Resources as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action alternatives, there would be no construction or maintenance impacts on known Tribal Cultural Resources. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-6, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities at Iron Gate, Copco No. 1, and Copco No. 2. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that revegetation activities would reduce erosion of fine sediments (Volume II Appendix B: Definite Plan – Appendix H) and would physically cover the remaining sediment deposits with a variety of vegetation, thus decreasing the potential for exposure and looting of TCRs located within the reservoir footprints. However, in general, sensitive areas located within the reservoir footprints would be subject to exposure and increased access since they would no longer be partially or completely covered by reservoir waters. This could increase the potential for looting of TCRs above levels occurring under existing conditions. The potential severity of this impact is underscored by significant anecdotal evidence of an extensive looting problem in the area, and by statements made by tribal members regarding the deep impact of past and ongoing looting, particularly in light of a history of repeated dispossession in the area (EIR, pages 3-835 – 3-836).

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This "Phase II" evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO stated that two of these were and seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.) A final determination on SHPO concurrence on the remining items is anticipated in February 2023.

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCRs included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including by reservoir drawdown.

Implementation of Mitigation Measure TCR-2 (LVPP) through the Historic Properties Management Plan, and of Mitigation Measure TCR-4 (as discussed above under Potential Impact 3.12-1) would significantly reduce the impacts of looting in the short term and long term. However, illegal looting remains a pervasive problem in the vicinity, as related through extensive anecdotal evidence by tribal members and archaeologists with experience in the area. Therefore, although it is likely that the LVPP would be effective in protecting most resources through the intensive monitoring and broad range of tools to address the concern, it would be unlikely to be completely effective. The impact of looting of certain resources is profound, and could result in material impairment of a resources' significant or result in the exposure or disturbance of human remains. Therefore, the increased risk of looting remains significant and unavoidable (EIR, page 3-836; EIS, page 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves reservoir drawdown of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in an increase in the potential for looting of TCRs above levels occurring under existing conditions.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, there would be no increase in the potential for looting of TCRs as no reservoir drawdown would occur. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and No Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-7, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or long-duration precipitation events immediately following reservoir drawdown and prior to vegetation establishment/full stabilization of sediment deposits. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that immediately following reservoir drawdown, high-intensity and/or long-duration precipitation events could occur that would result in surface erosion of remaining reservoir sediment deposits and cause exposure of or disturbance to TCRs located within the reservoir footprints. Within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs, which is the focus of this analysis for Potential Impact 3.12-7, numerous TCR sites have been identified (Confidential Appendices P and Q). Additionally, there may be many as-yet unknown TCRs located within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs (EIR, page 3-836).

The risk of continued erosion and subsequent exposure of or disturbance to TCRs located in the reservoir footprints, particularly for those associated with relatively shallow (e.g., less than 2 feet deep) sediment deposits (Confidential Appendices P and Q), would decrease within weeks to months following reservoir drawdown as revegetation stabilizes the remaining sediments. Monitoring and targeted revegetation activities included in the proposed Reservoir Area Management Plan (Volume II Appendix B: Definite Plan – Appendix H) would reduce the risk of impacts to TCRs located in areas of large crack or gully formation. As the system returns to riverine conditions within the reservoir footprints, with revegetated terraces along the river and sides of the former reservoirs, long-term erosion and sediment transport rates would return to natural rates for this portion of the watershed (USBR 2012c) (EIR, pages 3-837 – 3-838).

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This “Phase II” evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO concurred that two of these were and determined that seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.) A final determination on SHPO concurrence for the remaining sites is anticipated by February 2023.

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological TCRs included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including by reservoir drawdown.

Implementation of the HPMP, which includes Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), and TCR-3 (IDP) (discussed above) would reduce these impacts but overall they would remain significant and unavoidable for the reasons described above under potential Impact 3.12-2 for erosion related to reservoir drawdown (EIR, page 3-838; EIS, page 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in reservoir drawdown and could still result in impacts to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no reservoir drawdown and, therefore, no impacts to known or unknown Tribal Cultural Resources Tribal Cultural Resources associated with short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-8 (prior to land transfer), EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant long-term (post-removal) impact to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As indicated above under Potential Impact 3.12-2, despite the protection offered from the remaining sediment deposits, the vulnerability of existing TCRs to long-term exposure due to natural rates of erosion and sediment transport for the watershed after reservoir drawdown would still increase as compared to existing conditions where the

reservoir waters offer almost complete protection from access and looting (with the exception of resources located within the reservoir fluctuation zone). The potential impact of this increased potential is underscored by significant anecdotal evidence of an extensive looting problem in the area, and by tribal members' testimony regarding the deep impact of past and ongoing looting, particularly in light of a history of repeated dispossession in the area (EIR, page 3-839).

Since adoption of the EIR, 57 archeological sites, including both tribal and non-tribal resources, were further evaluated for eligibility for listing on the National Register, with 36 sites not being evaluated because they would not be affected by the Proposed Project. This "Phase II" evaluation of additional sites resulting in a recommendation for listing 45 of these sites. The California SHPO stated that two of these were and seven of these were not eligible for listing. (EIS, pages 3-478 to 3-479.) A final determination on SHPO concurrence on the remining items is anticipated in February 2023.

Although the Proposed Project's impacts to Traditional Cultural Properties (namely Big Bend, Kikaceki District and Klamath Cultural Riverscape) would be beneficial (See EIS, pages 4-25, 3-487), EIS Section 3.10.3.3 notes that eleven of the twelve identified archeological sites included the Kikaceki District Traditional Cultural Property would be potentially adversely affected under the Proposed Project, including from increased public access and associated potential for looting.

Implementation of the Historic Properties Management Plan, which includes Mitigation Measures TCR-1 (TRMP), TCR-2 (LVPP), and TCR-3 (IDP), as described above, would reduce long-term impacts to TCRs from increased looting opportunities and surface and subsurface erosion; however, these impacts would remain significant (EIR, page 3-839, EIS 3-485).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in significant long-term (post-removal) impacts to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no long-term impacts to Tribal Cultural Resources as a result of reservoir drawdown as dam removal would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-8 (after land transfer), EIS, Section 3-484, page 3-485 & EIS, Section 3.10.3.4 and page 4-24

The State Water Board finds that the Proposed Project would result in a significant long-term (post-removal) impacts to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, after land transfer, particularly in light of the removal of federal protection following land transfer. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that Increased access to TCRs due to land transfer has the potential to lead to looting above levels occurring under existing conditions or to land uses that result in material alteration of TCRs in a way that would undermine their current or historical tribal significance. The process for determining future land use under the KHSA Section 7.6.4 has the potential to offer TCRs appropriate protection through a variety of land use strategies. Implementation of mitigation measures TCR-6 (Land Transfer), TCR-7 (Land Easement and Transfer Stipulations), and TCR-8 (Off-site Land Transfer) have the potential to reduce the impact of future land use decisions to less than significant. These measures are in alignment with the general proposed measures for consideration to mitigate impacts to TCRs described in Public Resources Code section 21084.3, subdivision (b)(3).

However, the ultimate feasibility of these measures are uncertain. For TCR-6 and TCR-7, the degree of feasibility depends on overall planning for various public uses and available funding. These plans are being made through long-term planning process by CDFW (see EIS, page 3-497), and the State Water Board lacks the authority to impose them through its Clean Water Act section 401 certification. TCR-8 is likewise outside of the State Water Board's authority to require, and, while the KRRC commits to considering such transfer in the appendix to the HPMP, it does not commit to any specific purchase. The EIR discloses them and this findings document discusses them because it is likely that the protections would be viable for at least some portion of the identified lands, and because they represent a potentially feasible path to protect TCRs (EIR, pages 3-840 – 3-841).

Mitigation Measure TCR-6 − Land Transfer

The State Water Board has determined, and KRRC has acknowledged, that transfer of some Parcel B lands to an entity representative of Affected Tribes which are traditionally and culturally affiliated with TCRs on such lands, could foster tribal cultural and conservation practices and promote tribal identity; and further, that such transfer could be an appropriate measure to address past disturbance of TCRs caused during

construction of Iron Gate Dam, Copco No. 1 Dam, and Copco No. 2 Dam, and to mitigate the impacts to TCRs caused by Project implementation.

Pursuant to KHSA Section 7.6.4, the California Natural Resources Agency (CNRA) and CDFW have begun the process to determine the disposition of Project-related (or "Parcel B") lands, totaling approximately 8,000 acres, for public interest purposes. In California, that process is anticipated to involve the following steps: (1) inspections and preliminary due diligence regarding the condition of the Parcel B lands; (2) consultation with KHSA parties and other stakeholders regarding disposition; (3) for each parcel, a proposal by CNRA and CDFW regarding proposed transferee and other terms; (4) actual transfer of Parcel B lands from PacifiCorp to KRRC, upon KRRC's notice that it has secured all necessary permits for dam removal; and (5) subsequent transfer from KRRC to California or the third-party transferee, by parcel.

Based on AB 52 consultation, the State Water Board has identified the following potential mitigation measure, which is dependent on the outcome of the process required by KHSA Section 7.6.4. The Shasta Indian Nation has proposed the transfer of selected Parcel B lands (as identified in Confidential Appendix Q they have identified as possessing the most significant tribal cultural value to the Shasta Indian Nation and also having central importance to other Shasta peoples. The Shasta Indian Nation has proposed transfer to an entity, such as the Kikaceki Land Conservancy, that includes representation of the several bands of Shasta peoples. While it is too early in the process to determine the feasibility of such transfer, this measure is included for analysis in the Environmental Impact Report. In the process required by KHSA Section 7.6.4, the KRRC shall support consideration of transfers of selected lands to an entity representative of Affected Tribes that are traditionally and culturally affiliated with the TCRs on such lands, in circumstances where the lands have resources of critical tribal importance and such transfer would be a cost-effective approach to protect such resources (EIR, pages 3-841 – 3-842).

Mitigation Measure TCR-7 − Proposal for Land Easement and Transfer Stipulations

The CNRA and CDFW have begun initial discussions in a stakeholder process for determining land disposition as described in KHSA Section 7.6.4, including discussions with Shasta people.

1. For TCRs and such sites that are protected under Public Resources Code 5097.993, land easement and transfer stipulations could ensure that protection measures described in the TCRMP encumber the title for all subsequent owners for other lands not returned to the Shasta people. Any such land easement or transfer stipulations shall be consistent with KHSA Section 7.6.4 and other applicable terms.

2. There is also the potential to coincide public wildlife conservation management areas with lands that contain tribal cultural values to restrict public access where feasible and promote protection of cultural sites.

3. These mechanisms can also provide the opportunity for Shasta people to access TCRs through creation of tribal conservation easements (EIR, page 3-842).

Mitigation Measure TCR-8 − Off-site Land Transfer

At any time prior to completing the TCRMP, the KRRC may identify parcels of land not subject to the process under KHSA Section 7.6.4, that may be appropriate for transfer to an entity representative of Affected Tribes (such as the Kikaceki Land Conservancy), as off-site mitigation for Project-related impacts to TCRs. Any such transfer involving the KRRC is subject to funding availability consistent with the terms (including funding authorities) of the KHSA (EIR, page 3-842).

Additionally, as noted in the EIS, "absent agreements in place to ensure their long-term protection, sites located on Parcel B lands would be affected by the transfer of these properties to non-federal entities, resulting in unpredictable disposition, use and management of these lands…[which] could result in long-term, significant, adverse effects on sites that are eligible for listing in the National Register." (EIS, page 3-485.) Though the KHSA envisions a process for land transfer to the states or a third party designee, and mitigation measures TCR-6 and TCR-7 further specify means to ensure protections of resources located on Project lands, this impact remains significant as the specific disposition of Project lands following dam removal are unknown. It is assumed that resource protection is within the public interest and would be managed by the States or a third-party designee appropriately.

Potential Impact 3.12-11, EIS Sections 3.10.3.2, 3.10.3.4

The State Water Board finds that the Proposed Project would result in a significant impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, some of which are individually eligible for listing, as well as the proposed individual hydroelectric districts associated with each facility that have separately been determined eligible for listing in the National Register, and the Klamath River Hydroelectric Project District as a whole. The State Water Board finds that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the Proposed Project would include removal of large-scale contributing elements of the Klamath River Hydroelectric Project District, an historical resource recommended eligible for listing to the California Register of Historical Resources for the role in early development of electricity and economy of the southern Oregon and northern California regions (Cardno Entrix 2012; Kramer 2003a,b) (EIR, page 3-846). Similarly, the EIS explains that the Klamath River Hydroelectric Project District is eligible for listing in the National Register. (EIS, page 3-485.) Volume III, Tables 4.3-1, 4.3-3, and 4.3-5 provided National Register eligibility recommendations for

each of the features making up the Lower Klamath Project for purposes of the EIR. Since issuance of the EIR in 2020, the KRRC has further refined the analysis of the facilities in the Historic Build Environment Technical Report (AECOM, 2022b) and identified that each of the four hydroelectric developments scheduled for removal under the Proposed Project constitutes an individual historic district eligible for listing in the National Register, as well as contributing to the larger Klamath River Hydroelectric Project District. (EIS, page 3-479.) Table 3.12-11 of the EIR similarly indicates that some of the individual facilities that are part of the hydroelectric district are eligible for listing.

Under the Proposed Project, J.C. Boyle Dam, Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, and many of the associated hydroelectric facilities would be removed. (See Section 2 Proposed Project.) Proposed Project activities would directly impact the historical significance of the dam structures and hydroelectric facilities and other associated properties. Removal of the three California dams (the major contributors of significance), would preclude the ability for the district to remain eligible for listing with the California Register of Historical Resources. Thus, facilities removal would be a significant impact on the resource (EIR, pages 3-846 – 3-847). Additionally, removal would constitute a significant impact on the four National Register-eligible districts, because removal would substantially compromise the districts' integrity of design, setting, materials, workmanship, feeling and association. (EIS, page 3-486.)_

The KRRC has completed a consultation process through Section 106 to develop a Historic Properties Management Plan (HPMP) and a Programmatic Agreement. The final HPMP was filed with FERC on October 14, 2022, and the Programmatic Agreement was completed on October 17, 2022.

Even with the inclusion of documentation measures in conformance with the Secretary of the Interior's guidance, the impact to the resource and its context would be significant and the historic resource would be materially impaired. Thus, the impact to the Klamath Hydroelectric Historical District under the Proposed Project would be significant and unavoidable even with the mitigation measures in the HPMP. (EIR, pages 3-847 – 3-848).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal or construction at the dam complexes (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to the Klamath Hydroelectric Historical District as the Proposed Project, though at a reduced scale. Each alternative that removes a particular development would have the same impact on the applicable hydroelectric facility's individual historic district as well, such that the Partial Removal and Three Dam Removal alternatives would have the same impacts to the Iron Gate, Copco No. 1 and Copco No. 2 facilities, the Continued Operations with Fish Passage Alternative would significantly impact all three facilities, but on a lesser scale, and the Two-Dam Removal Alternative would have the

same impacts to Iron Gate and Copco No. 1, but not have reduced impacts to Copco No. 2. The Partial Removal Alternative would potentially preserve individual elements of the hydroelectric facilities that are eligible for listing, but long-term preservation and management is not assured, even as the HPMP provides potential alternatives for such preservation and management. Even though there would be less construction impact under some of the other alternatives as compared to the Proposed Project, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.Under the No Action and Project alternatives, there would be no impacts to the Klamath Hydroelectric Historical District would occur. However, these alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-12, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact associated with pre-dam-removal activities that involve disturbance of the landscape, including construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and improvements that could result in potential exposure of or damage to historic-period archaeological resources (identified in Volume I Table 3.12-1) through ground-disturbing construction and disposal activity and increased access to sensitive areas. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that historic-period cultural resources are known to be present within Area of Analysis Subarea 1 (Volume I Figure 3.12 2) and are identified in Volume I Table 3.12-1. Pre-dam removal activities involving ground disturbance, construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and/or improvements would occur within the Area of Analysis Subarea 1 (EIR, page 3-848).

Due to the nature of ground-disturbing activities and a general increase in the level of activity (e.g., construction, surveys) within the Area of Analysis Subarea 1, pre-dam removal activities that would involve ground disturbance have the potential to result in the following impacts to historic-period cultural resources through physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings;

and/or exposure or substantial movement of the resources leading to increased illicit looting resulting in a significant impact (EIR, page 3-848).

To reduce impacts to historic-period cultural resources associated with pre-dam removal activities, the KRRC developed a Historic Properties Management Plan to identify historic properties and that includes measures to implement before and during drawdown and dam removal activities to protect significant historic, historical, cultural, and tribal resources during Proposed Project implementation. The Historic Properties Management Plan was submitted to FERC for approval before the commencement of any ground disturbing activities (including reservoir drawdown) on October 14, 2022. The Programmatic Agreement was executed on October 17, 2022.

Additionally, the KRRC has committed, in the Historic Properties Management Plan, to implement a Looting and Vandalism Prevention Program (LVPP) to reduce looting and vandalism to TCRs and historic-period cultural resources (as required under Mitigation Measure TCR-2, and discussed above), and an Inadvertent Discovery Plan (IDP) that would include actions to implement in the event an inadvertent discovery (e.g., human remains) (as required under Mitigation Measure TCR-3 and discussed above), both of which would provide for compliance with applicable laws regarding cultural resources and human burials. The Historic Properties Management Plan and the Programmatic Agreement, are anticipated to reduce impacts, but in light of the number of potential resources, the potential impact remains significant. (See EIS, page 4-24.) substantially.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves pre-dam removal activities of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts as a result of potential exposure of or damage to historic-period archaeological resources.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no pre-dam removal activities. Therefore, there would be no impact to historic-period archaeological resources associated with these activities. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-13, EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate

this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that since construction of Lower Klamath Project reservoirs, fine sediments have accumulated on the reservoir bottoms covering the original topography and potentially historic-period cultural resources that were present prior to reservoir construction. Because the accumulated sediments are primarily fine material, they will be easily eroded and flushed out of the reservoirs into the Klamath River during reservoir drawdown. The degree of sediment erosion will vary, with the majority of the erosion focused in the former river channel that is currently submerged in Copco No. 1, Copco No. 2, and Iron Gate reservoirs (Volume I Figures 2.7-5 and 2.7-6). The Proposed Project also includes barge-mounted pressure spraying during reservoir drawdown that would target six locations in Copco No. 1 Reservoir and three locations in Iron Gate Reservoir (EIR, page 3-849).

Due to the nature of ground-disturbing activities during drawdown within the Area of Analysis Subarea 1 that have the potential to result in physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings; and/or exposure or substantial movement of the resources leading to increased illicit looting, the impact of drawdown to historic-period cultural resources would result in a significant impact. However, as discussed in *Potential Impact 3.12-2 and EIS Section 3.10.3.1, page 3-485*, implementation of the Historic Properties Management Plan, which includes Mitigation Measures TCR-2 (LVPP), and Mitigation Measure TCR-3 (IDP), would reduce significant drawdown impacts considerably, and, for many resources is expected to avoid impacts completely through the design and implementation of construction plans or on-the-ground modifications to Proposed Project implementation. For impacts that it is not feasible to completely avoid, the impacts may be reduced to a less than significant level with implementation of the Historic Properties Management Plan, * However, because the State Water Board cannot ensure implementation of the Historic Properties Management Plan and the Programmatic Agreement, and in light of the additional analysis in the EIS, it finds the impact as significant and unavoidable (EIS, page 4-24).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves reservoir drawdown of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would still result in impacts to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from drawdown.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no reservoir drawdown. Therefore, there would be no impact to historic-period archaeological resources due to shifting, erosion, or exposure from drawdown. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the

Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-14 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek due to short-term erosion or flood disturbance from reservoir drawdown. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could result in minor alterations to the FEMA 100-year floodplain inundation area downstream of Iron Gate Dam, along the 18-river mile stretch of the Middle Klamath River between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012c). Changes in the extent of the floodplain inundation area could affect potential historic-period cultural resources currently located within the FEMA 100-year floodplain (P-47-00522 [Empire Quartz Mine], P-47-00536 [Klamathon Townsite and Limber Mill], P-47-003937 [Rock Wall], P-47-004212 [Bridge], and P-47-004427 [artifact scatters]) which could result in a significant impact to historic-period cultural resources (EIR, page 3-852).

As discussed in Potential Impact 3.12-11 above, the KRRC has developed a Historic Properties Management Plan, which includes an Inadvertent Discovery Plan (Mitigation Measure TCR-3) to identify historic properties and include measures to implement before and during drawdown and dam removal activities to protect historic, cultural, and tribal resources. Implementation of the Historic Properties Management Plan and the IDP (as discussed above) may reduce impacts to resources identified in the 18-river mile stretch below Iron Gate Dam but given their proximity to Iron Gate Dam and their future inclusion in the altered 100-year floodplain following completion of the Proposed Project, impacts would remain significant and unavoidable (EIR, page 3-852).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to potential historic-period cultural resources currently located within the FEMA 100-year floodplain.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, there would be no changes to the FEMA 100-year floodplain. Therefore, there would be no impacts to potential historic-period cultural resources currently located within the FEMA 100-year floodplain. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project and No Action

alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-15, and EIS Section 3.10.3.3, page 3-487, EIS Section 3.10.3.1 (page 3-485)

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that blasting and other dam removal techniques could cause significant adverse impacts to historic-period cultural resources located in the immediate vicinity of Iron Gate, Copco No.1 and Copco No. 2 dams (as described in Potential Impact 3.12-4 above). The direct physical disturbance associated with blasting and other removal techniques could significantly impact historic-period archaeological resources that directly overlap with the blasting locations. For historic-period cultural resources that may be present in the immediate vicinity, impacts to these resources associated with dam removal would be significant and unavoidable (EIR, pages 3-852 – 3-853, EIS 3-484).

As discussed in Potential Impact 3.12-11, the KRRC has developed a Historic Properties Management Plan, including an Inadvertent Discovery Plan to identify historic properties and include measures to implement before and during drawdown and dam removal activities to protect historic, cultural, and tribal resources. Implementation of the Historic Properties Management Plan may reduce impacts to resources in the immediate vicinity of Iron Gate, Copco No. 1, and Copco No. 2 dams, but given construction activities and their potential for impacts to potential historic-period cultural resources, impacts would remain significant and unavoidable (EIR, page 3-853).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to historic-period cultural resources, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, historic-period cultural resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far

towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Action and Project alternatives, there would be no construction-related impacts historic-period cultural resources. Therefore, there would be no impact. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-16, and EIS Section 3.10.3.1, page 3-485

The State Water Board finds that the Proposed Project would result in significant impacts to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction, and ongoing road and recreation site maintenance. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the Proposed Project Reservoir Area Management Plan includes restoration activities that would occur both within the reservoir footprint and in upland areas (i.e., disposal, staging, and hydropower infrastructure demolition areas, access roads, former recreational areas) within the Area of Analysis Subarea 1 (Volume I Figure 3.12 2). Historic-period archaeological resources are known to be located within the footprints of Lower Klamath Project reservoirs (EIR, page 3-853).

Ground-disturbing activities associated with ongoing road, restoration, and recreation site maintenance within the Area of Analysis Subarea 1 (Volume I Figure 3.12 2) include grading and excavating, which may result in material impairment due to physical demolition, destruction, relocation, or alteration of historic-period cultural resources located in both upland and reservoir footprint locations resulting in a significant impact (EIR, page 3-853, EIS 3-485).

However, as discussed in Potential Impact 3.12-11, implementation of the Historic Properties Management Plan, which includes Mitigation Measure TCR-2 (LVPP), and Mitigation Measure TCR-3 (IDP), would reduce significant post-dam removal restoration impacts considerably, and, for many resources is expected to avoid impacts completely, through the design and implementation of construction plans or on-the-ground modifications to Proposed Project implementation. For impacts that it is not feasible to completely avoid, the impacts may be reduced to a less than significant level with implementation of the Historic Properties Management Plan, including Mitigation Measures TCR-2 (LVPP) and Mitigation Measure TCR-3 (IDP). Because of the density of properties, the impact remains significant. (EIS, page 4-24.)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts historic-period cultural resources as a result of ground disturbances, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, historic-period cultural resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project and No Action Alternatives, there would be no impacts historic-period cultural resources as a result of ground disturbances as no construction would occur. However, these alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.12-1, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey) resulting from improved river ecosystem function and increased habitat access; and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, and attainment of its restoration objectives support the State Water Board's approval of the Proposed Project despite the

significant and unavoidable impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas.

Potential Impact 3.12-2, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in impacts to known or unknown, previously submerged Tribal Cultural Resources due to shifting, erosion, and exposure associated with drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs (EIR, Section 3.12-2) and archaeological resources and districts (EIS 3.10.3.1). As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known Tribal Cultural Resources and archaeological resources and districts.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey) resulting from improved river ecosystem function and increased habitat access; and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas.

Potential Impact 3.12-3 (Middle Klamath River from Iron Gate Dam to Humbug Creek), EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources Approval of the Proposed Project thus would result in a significant unavoidable impact to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown.

Potential Impact 3.12-4. EIS Sections 3.10.3.1, page 3-485, and 3.10.3.3, page 3-486

As indicated above the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known or unknown Tribal Cultural Resources

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, , support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques.

Potential Impact 3.12-5, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to known Tribal Cultural Resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction and ongoing road and recreation site maintenance during operation. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known Tribal Cultural Resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration and ongoing road and recreation site maintenance.

Potential Impact 3.12-6

As indicated above the Proposed Project would result in a significant impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities at Iron Gate, Copco No. 1, and Copco No. 2. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a short-term and long-term significant unavoidable impact to Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality

and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue. (EIS 3-506.)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities.

Potential Impact 3.12-7, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown and prior to vegetation establishment/full stabilization of sediment deposits. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a short-term and long-term significant unavoidable impact to known or unknown Tribal Cultural Resources within the reservoir footprints.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion.

Potential Impact 3.12-8 (prior to land transfer) EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to Tribal Cultural Resources and archaeological resources and districts (EIS 3.10.3.1) as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources and archaeological resources and districts, prior to land transfer. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a long-term (post-removal) significant unavoidable impact to Tribal Cultural Resources and archaeological resources and districts prior to land transfer.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable long-term (post-removal) impact to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer.

Potential Impact 3.12-8 (after land transfer) EIS, Section 3-484, page 3-485 & EIS, Section 3.10.3.4 and page 4-24

As indicated above the Proposed Project would result in a significant long-term (post-removal) impact to Tribal Cultural Resources and archaeological resources and districts (EIS 3.10.3.1) as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources and archaeological resources and districts, following land transfer. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a long-term (post-removal) significant unavoidable impact to Tribal Cultural Resources and archaeological resources and districts following land transfer.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust

species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506)

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable long-term (post-removal) impact to Tribal Cultural Resources and archaeological resources and districts as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources and archaeological resources and districts, following land transfer.

Potential Impact 3.12-11, EIS Section 3.10.3.2

As indicated above the Proposed Project would result in a significant impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole, which are historical resource recommended eligible for listing to the California Register of Historical Resources. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole.

Beneficial effects of the Proposed Project to Historic and Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall benefits of the Proposed Project along with long-term Historic and Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to

Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole.

Potential Impact 3.12-12, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to submerged historic-period archaeological sites upon reservoir drawdown and exposure providing new access opportunities for artifact collecting and unauthorized excavation. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to submerged historic-period archaeological sites.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to submerged historic-period archaeological sites upon reservoir drawdown and exposure providing new access opportunities for artifact collecting and unauthorized excavation.

Potential Impact 3.12-13, EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in a significant impact to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period archaeological resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath

River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from reservoir drawdown.

Potential Impact 3.12-14 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

As indicated above the Proposed Project would result in a significant impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek due to short-term erosion or flood disturbance from reservoir drawdown. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek.

Potential Impact 3.12-15, and EIS Section 3.10.3.3, page 3-487, EIS Section 3.10.3.1 (page 3-485)

As indicated above the Proposed Project would result in a significant impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period cultural resources associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques.

Potential Impact 3.12-16 and EIS Section 3.10.3.1, page 3-485

As indicated above the Proposed Project would result in significant short-term and long-term impacts to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction, and ongoing road and recreation site maintenance. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant short-term and long-term unavoidable impact to historic-period cultural resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality

and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs. FERC's EIS found the improved water quality, aquatic resources, terrestrial resources associated with Project implementation would result in a beneficial effect to tribes. Additionally, restoration of commercial fishing would benefit tribal communities by improving tribal revenue (EIS 3-506).

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration and ongoing road and recreation site maintenance.

Conclusions

The State Water Board recognizes that the Proposed Project will result in numerous significant and unavoidable impacts to Historical and Tribal Cultural Resources described above, as well as a benefit to the Klamath Riverscape, a Tribal Cultural Resource. The Proposed Project's environmental benefits, combined with the benefit to the Klamath Riverscape in the area of Historical and Tribal Cultural Resources, outweigh its significant environmental effects. The State Water Board finds that the broad environmental benefits of the Proposed Project, combined with the benefit to the Klamath Riverscape in the area of Historical and Tribal Cultural Resources, outweigh these impacts, and that they are therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Paleontologic Resources

Overview

While the majority of bedrock deposits within the Area of Analysis for paleontologic resources are not fossil-bearing units, exceptions include an unnamed diatomite deposit along the shores of Copco No. 1 Reservoir and the Hornbrook Formation (USGS 1983, Elliot 1971). The Hornbrook Formation is classified with a Low Paleontologic Potential. Based on observations of the Klamath River cutbank from the Old Hornbrook Highway and along Klamathon Road, the Hornbrook Formation bedrock is not presently exposed along the north bank of the Klamath River in this region. The banks of the river in this area are well vegetated and, downstream of the end of the Old Hornbrook Highway, they are armored by materials that form the road base for U.S. Interstate 5 (EIR, page 3-870).

The Final EIR considers whether Proposed Project actions would result in the destruction of any High Potential Paleontologic Resources (as defined in Volume I

Table 3.13-2) or result in substantial adverse effects on any High Potential Paleontologic Resources. As discussed in Volume I Section 3.13, the State Water Board concludes that Potential Impact 3.13-1 would not be significant.

CEQA Findings

The State Water Board finds that there would be no impact to paleontologic resources due to implementation of the Proposed Project. The EIR explains the various ways that nonrenewable paleontologic resources could be harmed, which includes excavation using heavy equipment, the fossil bearing geologic units in the Area of Analysis are exposed in regions that have exposure to river flows and could be harmed by erosion and undercutting. It is possible that river flows would be sufficiently large to erode the fossil bearing bedrock, undercutting this bedrock, leading to slope failure. If this were to happen, nonrenewable paleontologic resources could be harmed by the destruction of these outcrops through erosion and slope failure (landslides) (EIR, page 3-869).

The base level (e.g., the lowest level to that erosion can happen due to running water) of the river in the region of Hornbrook is controlled downstream by Mesozoic to Paleozoic basement rock and this base level control pre-dated the installation of any dams, including the Lower Klamath Project, on the Klamath River. The proposed drawdown rates for each of the four dams are similar in magnitude to historical flow rates and discharge statistics for these reservoirs. Flow rates downstream of the dams are not anticipated to exceed substantially median historical rates. In other words, discharges during drawdown would be similar to, or less than, the seasonal 10-year flood rates of discharge (EIR, page 3-871).

Based on the analysis of Potential Impact 3.11-6 in Volume 1 of the EIR, there could be bank erosion and slope failures in the lower river, but the magnitude of this bank erosion will not be substantial given that the flow rates will be similar or lower than flow rates during the operation of the Lower Klamath Project dams. Thus, there is a low likelihood that changes to river discharge under the Proposed Project would lead to downcutting or erosion of the Hornbrook Formation to a greater degree than existed prior to the construction of facilities associated with the creation of the Lower Klamath Project (EIR, page 3-871).

The EIR indicates that the Hornbrook Formation is interpreted to be of Low Paleontologic Potential. Overall, given that there is a low likelihood that changes to river discharge under the Proposed Project would lead to additional downcutting or erosion of the Hornbrook Formation and the formation’s Low Paleontologic Potential, there would be no impact to paleontologic resources due to implementation of the Proposed Project (EIR, page 3-872).

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on paleontologic resources and no statement of overriding consideration is needed for this resource.

Land Use and Planning

Overview

The EIR Area of Analysis for land use and planning is located within Siskiyou County. Volume I Figure 3.14-3 portrays the existing land uses by zoning classification within the Area of Analysis for land use and planning. Land uses within the Area of Analysis are designated by the county using the following generalized categories: Agriculture – Grazing, Forestry Resources, Open Space – Natural Resources, Rural Residential, and Commercial – Services, with many parcels currently vacant.

The Final EIR considers whether Proposed Project actions would create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The EIR evaluates construction activities, removal of the Lower Klamath Project reservoirs, as well as restoration of the reservoir areas with regard to potential impacts on land uses and applicable plans and policies. As discussed in Volume I Section 3.14, the State Water Board concludes that Potential Impacts 3.14-1 and 3.14-2 would not be significant. The Proposed Project would be beneficial to the long-term scenic quality, recreational quality, fisheries, and wildlife of the California Klamath River wild and scenic river segment, and it would be beneficial to the long-term resource values of the eligible and suitable wild and scenic river segment.

CEQA Findings

The State Water Board finds that the Proposed Project would not create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The EIR explains that during construction, the Proposed Project would install cattle exclusion fencing around the reservoir restoration areas where they abut grazing land and where the existing topography does not already provide a barrier to cattle access (e.g., steep rocky terrain, residential areas, managed forests). The cattle exclusion fencing would be installed to protect revegetation efforts and to replace the function of the reservoirs as natural barriers to cattle movement. The exclusion fencing would be placed in accordance with applicable Federal, State, and county regulations and guidance (Volume II Appendix B: Definite Plan – Section 6.1.1). Since issuance of the EIR, the KRRC has finalized the Reservoir Area Management Plan (RAMP). The RAMP includes the installation of temporary fencing at high priority tributary work areas

to prevent browsing of newly planted vegetation. This fencing is intended to exclude cows and horses, the KRRC will install taller fencing if herbivory by deer becomes an issue. The proposed fencing would not physically divide an existing ranching community since it would be placed in locations where the reservoirs currently serve as a physical barrier to keep livestock on their designated lands and thus there would be no impact on connectivity relative to existing conditions (EIR, pages 3-882 – 3-883).

No roadways are proposed to be removed as part of the Proposed Project and although boating transport between reservoir shorelines would no longer be possible once the reservoirs are removed, there would be no change to road access as a result of reservoir removal. Since boating between reservoir shorelines as a means of travel is not the only available option for the community, reservoir removal would not create a physical barrier to travel for the community and there would not be a significant impact to connectivity due to the Proposed Project (EIR, page 3-883).

During construction activities, short-term, construction-related traffic could result in physical barriers to residents and local ranchers if road access were to be discontinued or substantially interrupted within the Area of Analysis. However, implementation of the proposed Traffic Management Plan (EIR Volume 1 Appendix B: Definite Plan – Appendix O2) would avoid the creation of a physical barrier to the community through construction strategies, such as scheduling, detour plans, signage and traffic control such that the potential impact would be less than significant (EIR, page 3-883).

After completion of the Proposed Project, roads owned or managed by PacifiCorp, which are primarily located on the south side of the California Lower Klamath Project reservoirs and were constructed for dam facility maintenance, may no longer be needed. While portions of these roads may currently be utilized by local residents, there are alternative access routes that connect to county roads, and so even if these roads are not maintained in the future, there would be no long-term physical barrier to road access under the Proposed Project and the impact would not be significant (EIR, page 3-883).

Additionally, the disposition of Parcel B lands would not conflict with land use plans. (EIS, page 3-450.)

There are a number of public agencies owning or regulating land use within the Area of Analysis for land use and planning.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would not create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, no statement of overriding consideration is needed for this resource. In addition, the Proposed Project would be beneficial to the long-term

scenic quality, recreational quality, fisheries, and wildlife of the California Klamath River wild and scenic river segment, and it would be beneficial to the long-term resource values of the eligible and suitable wild and scenic river segment.

Agriculture and Forestry Resources

Overview

Most of the land in the Area of Analysis is classified by the Department of Conservation (DOC) as Grazing Land, with a small area of Unique Farmland located approximately two miles south of Copco No. 1 Reservoir (Volume I Figure 3.15-1). There are no lands that are zoned Forest Resources under the Siskiyou County General Plan within the agriculture and forestry Area of Analysis (Volume I Figure 3.14-1). However, some of the lands (primarily near the upstream end of Copco No. 1 Reservoir) in the Lower Klamath Project may be managed for forest resources as a compatible use with existing Open Space zoning.

The Final EIR examines the potential effect of the Proposed Project on areas used or zoned for farmland or forest lands and the potential for conversion of the farmland or forest land to non-agricultural or non-forest use, respectively. Within the Area of Analysis, the EIR focuses on existing road systems to facilitate dam decommissioning and removal and disposal sites, since the river system itself is not used or zoned for farmland or forest land. As discussed in Volume I Section 3.15, the State Water Board concludes that Potential Impacts 3.15-1, 3.15-2, 3.15-3, and 3.15-4 would not be significant. Beneficial effects of the Proposed Project could include an increase in agricultural opportunities on currently inundated lands from reservoir drawdown; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). Additionally, the Parcel B lands could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898). Additionally, the EIS finds that the disposition of Parcel B lands would not conflict with land use plans. (EIS, page 3-450.)

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on agricultural or forestry resources. The use existing road systems to facilitate dam decommissioning and removal would need to be upgrade to allow for the heavy traffic expected during deconstruction. However, the existing roads and disposal sites for the dams are not currently used or designated for agriculture use. The EIR explains that these roads and disposal sites are existing and/or on lands not designated for agriculture, their use for disposal would not directly convert Farmland to non-agricultural use. There can be no conflict with Williamson Act land because there are no contract parcels within the agriculture and forestry Area of Analysis. The EIR concludes that the Proposed Project would not result in the conversion of farmland within the Area of

Analysis for agriculture and forestry resources to non-agricultural uses, and it would not conflict with existing zoning or Williamson Act contracts. Reservoir drawdown may increase agricultural opportunities on currently inundated lands; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). The Parcel B lands could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898).

There are no lands zoned for forest resources within the Area of Analysis, from the eastern end of Copco No. 1 Reservoir downstream to Iron Gate Dam (EIR Volume 1 Figure 3.14-1). The EIR explains that the roads and disposal sites, used to facilitate dam decommissioning and removal, are existing and/or on lands not designated for forestry, their use for disposal would not directly convert forest lands to non-forest use. Thus, there would be no changes in land use under the Proposed Project that would conflict with current forest use or zoning. There is the potential for an increase in forest land due to revegetation of previously inundated lands with woody species, however the full extent to which lands would reseed with forest species is unknown (EIR, pages 3-898 – 3-899). Implementation of the Proposed Project would not affect the forest lands or forest uses surrounding Copco No. 1, Copco No. 2, or Iron Gate reservoirs or in the larger agriculture and forestry Area of Analysis.

As indicated above, the roads and disposal sites, used to facilitate dam decommissioning and removal, are existing and/or on lands not used/designated as farmland or forest land (EIR, page 3-899). Therefore, the EIR concludes that the Proposed Project would not indirectly convert farmland to non-agricultural use or forest land to non-forest use.

The EIR explains that the Proposed Project would not involve other changes in the existing environment that could result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. Irrigated farmlands classified as Prime or of Statewide Importance, located primarily at the farthest eastern extent of Copco No. 1 Reservoir and farther upstream along the Klamath River (Volume I Figure 3.15-2), are flood-irrigated from direct diversions that are either located on the free-flowing reach of the Klamath River upstream of the Project or along tributaries. The headworks of these diversions would still be operational following the removal of the dams since they are situated on the natural channels of the river and tributaries and do not divert from the Lower Klamath Project reservoirs. Impacts on agricultural crops (primarily hay production) are not expected since the irrigation season occurs after the scheduled drawdown period (November to March; see also EIR Volume 1 Table 2.7-1) and these fields are not reliant on the reservoirs for their water supply. There is a possibility that agricultural diversion headworks downstream of each dam would experience siltation or otherwise be affected during reservoir drawdown (EIR Volume 1

page 3-899). However, the Proposed Project includes measures to address these temporary supply issues (see Potential Impact 3.8-3).

In the Lower Klamath Basin, some agricultural diversion of water occurs for farming and ranching from tributaries such as the Shasta, Scott, Salmon, and Trinity rivers. However, the Lower Klamath Project is located on the mainstem Klamath River. Therefore, these diversions of water from tributaries would not be affected by removal of the Lower Klamath Project dams (EIR, pages 3-899 – 3-900).

Disposal of Iron Gate Dam demolition debris would be placed on a 36-acre plot of Parcel B land approximately one mile south of the dam. This area is currently zoned as Open Space – Natural Resources under the Siskiyou County General Plan, but is open, non-irrigated grassland that is used for grazing. Although the site would be cleared of vegetation and topsoil in preparation for debris disposal, which would temporarily halt any grazing activity, the site would be regraded, capped with topsoil, and seeded once disposal is complete. This would restore the area and allow for continued grazing (EIR Volume 1 page 3-900). This temporary disturbance would be a less than significant impact in light of the availability of other lands for grazing and the small area involved.

Scoping comments expressed the concern that reservoir removal could affect local groundwater wells. However, based on available information, Farmland within the Area of Analysis does not rely upon groundwater wells for cultivated area irrigation, instead using flood irrigation by diverting surface water from tributaries to the Klamath River. In any event, implementation of the Groundwater Well Management Plan (as described in EIR Volume 1 Section 2.6.8.6 Groundwater Wells Management and in Appendix B: Detailed Plan), including well deepening, would return the production rate of any affected groundwater supply well to conditions experienced prior to dam decommissioning. Therefore, the potential for conversion of Farmland to non-agricultural uses resulting from lowering groundwater levels as a result of the Proposed Project would be less than significant (EIR, page 3-900).

The land within the agriculture and forestry Area of Analysis is not zoned forest land, does not contain commercial forest land, and is not used for forestry purposes. However, the Lower Klamath Project would allow previously inundated lands to revegetate and potentially increase the amount of forest cover within the Area of Analysis, which would be beneficial for forest land. Therefore, the Lower Klamath Project would not result in conversion of forest land to non-forest use in the short term or long term (EIR, pages 3-900 – 3-901).

Additionally, the EIS finds that disposition of Parcel B lands would not conflict with land use plans. (EIS, page 3-450.)

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on agriculture or forestry resources and no statement of overriding consideration is needed for these resources. In addition, beneficial effects of the Proposed Project could include increased agricultural opportunities on currently inundated lands from reservoir drawdown; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). Another beneficial effect would be the disposition of Parcel B lands, which could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898).

Population and Housing

Overview

The Proposed Project would not directly cause the elimination of existing housing (except for removing existing PacifiCorp housing, which is no longer needed). The Proposed Project would also not create a long-term increase in housing needs or induce long-term population growth. The EIR's analysis of potential effects of the Proposed Project, therefore, focuses on the temporary worker population required for construction activities and their potential need for housing within the Area of Analysis. The peak need for worker housing would occur over an approximate two-year construction period, with a lesser need for housing during preparation and follow-up restoration/monitoring activities. As discussed in detail in EIR Section 3.16 Population and Housing, the State Water Board concludes that Potential Impacts 3.16-1 and 3.16-2 would not be significant.

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on population or housing. The Proposed Project would not directly induce substantial population growth, as it does not require the construction of new permanent homes or the demolition of existing homes (except for a small number of residences owned by PacifiCorp and used by workers maintaining the dams) (see also EIR Volume I Potential Impact 3.16-2). Of primary concern is temporary worker population required for construction activities and their potential need for housing within the Area of Analysis (see EIR Volume I, Table 2.7-13). The EIR explains that proposed construction activities would require an average of 105 workers and a peak of 175 workers during the anticipated four-month peak period when work on three dams would occur at the same time. EIR Volume I, Table 3.16-1 indicates that the City of Yreka has 317 vacant units and the County, as a whole, has 4,989 vacant units, some of which may be close enough to the Proposed Project to provide an ample supply for the short-term influx of workers. It is also likely that many from the local construction workforce would already

live in the county and would not need short-term housing. Accordingly, the Proposed Project would not result in a substantial influx of population and there would be a less than significant impact on population growth in the Area of Analysis. Additionally, since adoption of the EIR, the Proposed Project has been amended to provide temporary housing on-site to construction workers. (See EIS, page 3-518.)

The EIR explains that existing housing currently owned and maintained by PacifiCorp would be removed as part of the Proposed Project, but this would no longer be needed to maintain the dam facilities (EIR Volume II Appendix B: Definite Plan). The potential effects of the Proposed Project on housing are limited to the need for an additional temporary worker population during construction activities and their potential need for housing. As existing vacancy rates (see EIR Volume I Table 3.16-1) are relatively high, and there are an ample number of construction workers that currently reside within the county, there would not be a need to displace existing residents due to construction activities. Additionally, since adoption of the EIR, the Proposed Project has been amended to provide temporary housing on-site to construction workers. (See EIS, page 3-518.) The loss of the residences PacifiCorp currently owns would not create a need to build replacement housing elsewhere. As a result, there would be no significant impact.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on population or housing and no statement of overriding consideration is needed for these resources.

Public Services

Overview

Evaluation of the Proposed Project's impacts on Public Resources focused on potential impacts related to maintaining acceptable service ratios, response times, or other performance objectives for any of the public services during the construction-related activities. The use of the rural roads for construction activities could interfere with emergency response and evacuation. In addition, demolition of the dams associated with the Proposed Project would result in elimination of a long-term water source for wildfire services (e.g., the reservoirs).

The Final EIR examines the potential effect of the Proposed Project on public services, including fire protection, police protection, schools, and parks, among others. As discussed in EIR Section 3.17, the State Water Board concludes that the potential effects of the Proposed Project on school services and facilities (Potential Impact 3.17-3) would not be significant. A potential beneficial effect of the Proposed Project includes long-term effects associated with the reduction in hydropower operation activity and existing recreation, which could reduce the risk and need for emergency services, as a result of reduced traffic from those uses. Additionally, the EIS finds that installing

additional sites for a monitored wildfire detection system, as would occur under the Proposed Project's Fire Management Plan, would result in a long-term significant beneficial effect on the early detection of new fires in the region.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects to public services are set out below.

CEQA Findings

Potential Impact 3.17-1 (short term), EIS Section 3.8.3.4, pages 3-457 to 3-458[16]

The State Water Board finds that increases in public service response times would be a significant impact for emergency fire, police, and medical services due to construction and demolition activities, including construction-related traffic, but that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that the Proposed Project could result in a significant impact if it results in substantial increases in emergency response times within the Area of Analysis. Since adoption of the EIR, the KRRC has developed a Traffic Management Plan that mitigates the potential short-term impacts of construction-related traffic and therefore minimize changes to public service response time. Due to the rural nature and low concentration of roads in the area, most existing roads are currently used, and would continue to be used, by emergency responders and for evacuation routes in the event of fire or other emergencies. The use of these roads for construction activities could interfere with emergency response and evacuation.

Section 3.21 Hazards and Hazardous Materials discusses the transport of hazardous materials, emergency, and wildfire potential and includes Mitigation Measure HZ-1 to address potential impacts to emergency response under the Proposed Project. As discussed in Section 3.22 Traffic and Transportation, the Proposed Project also includes an Emergency Response Plan. Mitigation Measure TR-1 includes coordination between the Traffic Management Plan and Emergency Response Plan and additional detail necessary to reduce impacts. Since adoption of the EIR, the Proposed Project has been amended to include on-site housing for construction workers, which will further reduce traffic impacts.

However, even with these measures that significantly reduce traffic impacts, there remains a temporary adverse impact on potential emergency response, due in part to

[16] The EIS analyzes traffic-related impacts together, while the EIR addresses them in multiple impacts. These findings maintain the EIS separation of the traffic into separate impacts, but incorporate the EIS as appropriate.

increased traffic (particularly on gravel roads in the construction area) and road closures and detours due to road improvements. (EIS, pages *3-457 to 3-458.*)

Potential Impact 3.17-2

The State Water Board finds that a substantial increase in response times would also be a significant impact for suppressing wildland fires where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that under the Proposed Project, removal of the Copco No.1, Copco No. 2, and Iron Gate reservoirs would also remove a long-term water source for fire suppression crews. While the initial response times for existing aircraft using fire retardant would not be changed by removal of the reservoirs, the turn-around time for helicopters or ground crews refilling with water for fire abatement purposes could be increased under the Proposed Project relative to existing conditions. Travel time involved in accessing water in newly formed pools in the Klamath River (both the current channel and the channel reaches to be exposed in the current reservoirs following drawdown) would be greater than that for the existing Lower Klamath Project reservoirs because retrieval of water from relatively smaller, more narrow, river pools is more difficult than dipping directly from the broad water surface of a lake or reservoir, and only one helicopter at a time would have access to a given river pool versus multiple helicopters that can draw at one time from a large reservoir (EIR, page 3-916).

Thus, although retrieving water directly from the Klamath River is consistent with how wildfires are suppressed along the Klamath River downstream of Iron Gate Dam under existing conditions, overall response and travel times between water fills for helicopter crews would be expected to increase with the loss of the reservoirs compared with existing conditions. Any amount of additional response time compared with existing conditions could result in a substantial increased risk of loss, injury, or death involving wildland fires and this would be a significant impact. To compensate for the loss of reservoir water supply, the Proposed Project includes providing alternate water supply through dry hydrants that would be accessible to ground crews following removal of the dams. Flows in the Klamath River and tributaries are not expected to substantially change post-dam removal, as compared to current flows, and firefighting ground crews could still use the river as a water supply as long as physical access to water is provided (EIR, page 3-916). While the proposed dry hydrants would provide a source of water to ground crews for firefighting, they do not offer the same degree of access as helicopter use of the reservoirs for wildfires occurring in the vicinity of the Lower Klamath Project, for which the reservoirs are the closest and safest source of water for

aerial crews (EIR, page 3-918). Other options that would assist in mitigating this impact would be to include appropriately placed dip ponds within the Proposed Project's restoration areas or direct withdrawal from the river using a boat ramp, pumping stations equipped with pumps connected to wells or deep pools in the river, above-ground storage tanks with ready access for transferring water to pumper trucks.

At the time of adoption of the EIR, the KRRC had committed to several additional standards in developing a Fire Management Plan:

- "KRRC intends to avoid a material net increase of fire risk as compared to baseline conditions in the Project area as defined in the Definite Plan."
- "KRRC is developing an updated Fire Management Plan that will include effective and feasible strategies and concepts to enhance both short-term and long-term fire prevention, detection, and suppression in the Klamath River Basin, and will submit the updated Fire Management Plan with FERC in support of the pending surrender application."
- "The updated Fire Management Plan is being developed in consultation with federal, California, Oregon, and local fire agencies. During construction, these measures include, but are not limited to meeting or exceeding federal, Oregon, and California requirements for fire prevention and suppression during construction activities, implementation of best management practices following National Fire Protection Association standards, and the designation of a safety officer on site that is responsible for overseeing fire responsibilities for construction operations 24 hours a day, seven days a week. The Fire Management Plan will also address long-term fire management to ensure that the Klamath River Basin's fire-fighting resources are not diminished due to the implementation of the Project, including the potential deployment of technology that will rapidly detect wildfire ignitions in the Basin allowing fire agencies to respond quickly to fire ignitions. KRRC is also consulting with fire agencies on identifying replacement water sources and access, including identification of aerial river access points."
- "In addition, KRRC has also contracted with Reax, a leading fire engineering firm that has assisted utilities throughout California (including PacifiCorp) to reduce operational fire risk. Reax will assist KRRC with the development of the updated Fire Management Plan to ensure that the measures set forth in the updated Fire Management Plan will effectively reduce short- and long-term fire risk as a result of the implementation of the Project".

The KRRC's comments on the draft EIS include a letter from CAL FIRE dated April 18, 2022, which states that CAL FIRE has worked closely with KRRC as it updates the FMP and considered the material revisions, including the addition of the Paradise Craggy site to the Alert Wildfire system. CAL FIRE concludes that the December 2021 version of the FMP is adequate to address and manage fire risks associated with dam removal (EIS page 3-453).

In KRRC's comment letter on the Draft EIR, dated February 26, 2019 (please refer to EIR Volume III comment ORG 47-3), KRRC states "*As a condition of license surrender, KRRC will address any potential increased response time and associated wildland fire risk due to implementation of the Proposed Project.*" KRRC further states "*KRRC continues to work with CAL FIRE to identify not only replacement sources of water, but ways in which KRRC can facilitate the reduction of overall emergency response times through communications and roadway improvements.*" KRRC goes on to describe specific steps that they would take to implement replacement sources and reduce overall emergency response times under the Proposed Project.

Since adoption of the EIR the KRRC has developed a final Fire Management Plan (FMP). The FMP includes measures that the KRRC will implement to reduce impacts associated with wildfires such as installation of an early detection monitoring system and the installation of dry hydrants. The KRRC will also purchase equipment to assist the local communities with defensible space and reducing risk of structure fires. The FMP also incorporates the FERC staff modification to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities (FERC Staff Modification, Bullet 13). The Final EIR included Recommended Measure PS-1 that recommends the KRRC and/or its Contractor(s) to develop, in consultation with the CALFIRE Siskiyou Unit, an updated Fire Management Plan that identifies long-term water sources for helicopter and ground crews (including construction and use of proposed dry hydrants, dip ponds, or other alternatives). The updated Fire Management Plan meets these requirements, and has been approved per Condition 15 of the amended water quality certification.

The EIS finds that the Proposed Project, together with the measures in the revised FMP, "would have a permanent, less than significant, adverse effect on the ability of state and federal wildland firefighting agencies to effectively respond to, and suppress, fires in the region. Access to open waterbodies for water scooping planes would be reduced by two reservoirs, but other bodies of water remain available, and other types of tanker planes and helicopters are also used for aerial firefighting. The construction of new water access sites would mitigate for the loss of existing reservoir boat ramps that are used to refill tanker trucks, resulting in a less than significant effect on fire suppression efforts. The installation of additional monitored detection system wildfire detection sites would have a long-term, significant, beneficial effect on the early detection of new fires in the region." (EIS, page 3-455.)

However, where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the reservoirs would otherwise have been the nearest water source, long-term impacts to the public's risk of loss from wildfires remain significant and unavoidable.

Under the Partial Removal, Three Dam Removal, and No Hatchery alternatives, elimination of the Lower Klamath Project reservoirs as a long-term water source for wildfire services and the associated increase in response times for fighting wildfires

(Potential Impact 3.17-2) would result in the same impacts as described for the Proposed Project because removal of the Lower Klamath Project reservoirs would still occur to ensure a free-flowing Klamath River under all river stages and flow conditions. Under the Two Dam Removal Alternative, the remaining Copco No. 2 Reservoir has a considerably smaller surface area would potentially accommodate fewer helicopters at one time as compared with Copco No. 1 and Iron Gate reservoirs under existing conditions, which would increase response times.

Under the Continued Operations with Fish Passage, No Action, and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and there would be no change from the existing condition in terms of the facilities' availability to serve as a long-term water source for fighting wildfires. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and No Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.17-1

As indicated above, increased traffic due to construction activities could increase public service response times which will impact emergency fire, police, and medical services in the short term. As noted above, the KRRC has developed a Traffic Management Plan which includes a series of measures that will reduce traffic impacts, and therefore reduce the chances that this potential impact will occur.

Removal of the Lower Klamath Project dams would also result long-term beneficial increases in Chinook salmon populations (EIR, Potential Impact 3.3-7 and FERC EIS 3-225), as it would open additional miles of habitat to Chinook salmon within and above the Hydroelectric Reach. This includes the habitat preferentially used by Spring Run Chinook prior to the construction of fish-barrier dams. It would also restore natural processes of gravel transport and deposition and improve water quality in the Klamath River, including reducing algal toxins and improving water temperature and DO conditions. Additionally, the release of sediment from behind the dams in the long-term would create more natural substrate characteristics and increase the number of spawning sites available to Chinook salmon. Dam removal would also support habitat complexity and likely reduce the incidence of fish disease by decreasing the population of fish parasites and allow fish to more widely disperse.

In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat.

The short-term nature of the impact, the substantial reduction in likelihood of the impact occurring in light of the measures in the Traffic Management Plan, and the significant benefits to environmental resources described in the EIS and EIR support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to the public's risk of loss from wildfires.

Potential Impact 3.17-2

As indicated above, removal of the Copco No.1, Copco No. 2, and Iron Gate reservoirs would remove a long-term water source for fire suppression crews after the reservoirs are removed. The removal of the reservoirs could increase turn-around time for helicopters or ground crews refilling with water for fire abatement purposes. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in long-term impacts to the public's risk of loss from wildfires associated with removal of the reservoirs. As noted above, the KRRC's most recent submittal to the State Water Board put forth a path to eliminating the risk: this reduces the changes that this potential impact will occur.

Since issuance of the EIR, the KRRC has developed a FMP which identifies strategies to mitigate for the loss of the Project reservoirs and provides long-term local and regional fire suppression resources. The FMP includes the installation of an early fire detection monitoring system, installing dry hydrants at road crossings, and will provide a mobile chipper, dump bed trailer, and truck to the Fire Safe Council of Siskiyou County to assist landowners with improving defensible space around home sites to reduce the risk of structure fires. Additionally, CAL FIRE concludes that the December 2021 version of the FMP is adequate to address and manage fire risks associated with dam removal (EIS page 3-453). The FERC finds that implementation of the FMP would result in a permanent, less than significant, adverse effect on the ability of state and federal wildland firefighting agencies to effectively respond to, and suppress, fires in the region. While the impact remains significant in terms of risk to specific structures, these measures greatly reduce overall risk. This difference in the determination of significance indicates that, while the impact remains significant, the degree of significance is not great.

The long-term environmental benefits, of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to the public's risk of loss from wildfires.

Conclusions

As indicated above, the Proposed Project would result in significant and unavoidable traffic impacts and long-term impacts to the public's risk of loss from wildfires due to the removal of the reservoirs. However, as described above in this document Proposed Project will also result in significant environmental benefits, including to aquatic resources, water quality and terrestrial resources.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the impacts to traffic and wildfire risk that remain after inclusion of feasible mitigation to be acceptable.

Tribal Trust

The EIS evaluated impacts on Tribal Trust, but did not find any significant impacts. In this section, the EIS found significant and permanent beneficial effects on Klamath River tribes due to improved aquatic species and angling, water quality, aquatic resources and terrestrial resources, and to related tribal practices and traditions adversely affected by the hydroelectric project. It further found that the restoration of commercial fishing would provide a permanent and significant beneficial effect on Tribal communities. It further found that there was likely to be a beneficial and significant overall socioeconomic effect on Tribes.

The State Water Board does not have any tribal trust responsibilities: these stem from the relationship of the federal government with Tribes.

Environmental Justice

Overview

Environmental justice means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies. (Gov. Code, § 65040.12, subd. (e)).

The State Water Board has taken several recent actions demonstrating its commitment to environmental justice and racial equity. In 2021 the State Water Board adopted Resolution No. 2021-0050 Condemning Racism, Xenophobia, Bigotry, and Racial Injustice and Strengthening Commitment to Racial Equity, Diversity, Inclusion, Access, and Anti-Racism. The resolution expresses the Board's commitment to making racial equity, diversity, inclusion, and environmental justice central to the Board's work. The resolution also directs Board staff to draft a Racial Equity Action Plan to identify specific actions the State Water Board will take to address Water Boards' systems that perpetuate racial inequities while establishing new, resilient systems. Board staff began public outreach including tribal consultation in Spring 2022 and released a draft Racial Equity Action Plan in September 2022 for public comment.

As part of the California Environmental Protection Agency's environmental justice program, the Office of Environmental Health Hazard Assessment developed CalEnviroScreen, a tool to help identify communities that face multiple burdens of pollution and socioeconomic disadvantage.

Environmental justice and racial equity are core priorities of the State Water Board. Although the State Water Board is not required under CEQA to evaluate the impacts to environmental justice, the State Water Board has considered the Proposed Project's impacts to environmental justice communities as described in the EIS and includes a finding of significance. (Pub. Resources Code, § 21100, subd. (b); Cal. Code Regs., tit. 14, §§ 15126.2, 15131.) The following section describes how environmental justice communities are affected by the environmental impacts of the Proposed Project.

CEQA Findings

EIS, Section 3.13.4

The State Water Board finds that the Proposed Project would have a significant impact on environmental justice populations. Changes or alterations have been required in or incorporated into the project which will substantially reduce impacts to environmental justice communities in the areas of geology and soils, water supply, public services, fire management, traffic, air quality, and noise. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(1).) However, it is not feasible to mitigate or avoid a significant impact on environmental justice populations in the areas of aquatic resources, recreation, traffic, aesthetics, socioeconomics, air quality, and noise. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3)).

As discussed in greater detail in EIS Section 3.1 Geology and Soils, Copco No. 1 reservoir drawdown could result in hillslope instability in reservoir rim areas, which could affect environmental justice communities. (EIS, page 3-542.) However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant. (See *Potential Impact 3.11-3*; Mitigation Measure GEO-1 as incorporated into Condition 18 of the water quality certification and Section 5 of the Reservoir Drawdown and Diversion Plan). Additionally, FERC staff recommends that the California Slope Stability Monitoring Plan be modified to include a public outreach component.

Sediment released from the reservoirs could be deposited on land downstream, as discussed more fully in EIS Section 3.1 Geology and Soils, including on land located in environmental justice communities. Mitigation Measure WQ-3 requires KRRC to assess, test, and remediate sediment for arsenic. With implementation of Mitigation Measure WQ-3, effects on environmental justice communities associated with contaminated sediment would be less than significant. Additionally, FERC staff recommends including outreach components in the Sediment Deposit Remediation Plan that specifically address environmental justice communities.

As discussed more fully in Section 3.2 *Water Quality* the proposed project has the potential to affect existing wells in close proximity to the Project reservoirs. The Proposed Project includes implementation of the California Water Supply Management Plan, which includes identification, monitoring, and funding for addressing groundwater wells that may be adversely impacted following dam removal and reservoir drawdown.

FERC staff recommends including outreach components in the California Water Supply Management Plan that specifically address environmental justice communities, which the KRRC has agreed to do. The Proposed Project would have no significant impact to groundwater resources, including wells located within environmental justice communities around Copco No. 1 Reservoir with such mitigation. (EIS, pages 3-543 – 3-544.)

Although the Proposed Project would have beneficial effects on aquatic resources, including on fall-run and spring-run Chinook salmon, coho salmon, steelhead, Pacific lamprey, and redband trout populations, the Proposed Project may reduce habitat for flatwater panfish, such as perch, bass, and stocked rainbow trout, which could affect environmental justice communities who use reservoirs for fishing. The change in the availability of fish species is a significant impact on environmental justice communities. (EIS, p. 3-544, 3-545).

The Proposed Project would result in increased congestion, road safety and conditions impediments, and emergency public service response times, including for residents in environmental justice communities. (EIS, page 3-547). These impacts are discussed more fully in EIS Section 3.8.3.4 Road Management and Traffic. These impacts are lessened by Mitigation Measure HZ-1, which addresses potential impacts to emergency response, and the inclusion in the Proposed Project of an Emergency Response Plan. Mitigation Measure TR-1 also requires coordination between the Traffic Management Plan and Emergency Response Plan to further reduce impacts. However, the Traffic Management Plan and Emergency Response Plan measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (See Potential Impact 3.17-1).

In addition, as discussed in greater detail in EIS Section 3.8.3.2 *Fire Management Plan* loss of access to Copco No. 1, Copco No. 2, and Iron Gate reservoirs could hinder fire suppression efforts in the region, including in environmental justice communities. (See also Potential Impact 3.17-2). As discussed in the Public Services section above, KRRC has developed a FMP that substantially lessens these impacts, including a public outreach component to specifically address communication related to emergency planning with environmental justice communities, as recommended by FERC staff, in Bullet No. 13.

As discussed more fully in EIS Section 3.9 Aesthetics, reservoir drawdown, dam removal and restoration under the Proposed Project will result in a significant impact to aesthetics. Nearby residents belonging to environmental justice communities would experience loss of an open-water, reservoir view and visual impacts of unvegetated banks, construction equipment, and dust in the short term. (EIS p. 3-548.) It is not feasible to mitigate the loss of open-water views because removal of the reservoir is integral to the Proposed Project, as well as the cause of the visual impact, as is discussed under *Potential Impact 3.19-4*. It is also not feasible to mitigate the short-

term impacts, as re-vegetation of exposed ground will take time, as discussed under *Potential Impact 3.19-1.*

As discussed in greater detail in the Recreation Section, the Proposed Project would result in a significant local impact to reservoir recreation. The Proposed Project would drain existing reservoirs and remove existing lake-side recreation sites. Although other lakes and reservoirs in the region provide similar recreation opportunities, the impact on local users of reservoir recreation including members of environmental justice communities, particularly individuals unable to travel, would be significant, as further described under *Potential Impact 3.20-2*. FERC staff has recommended including multi-lingual signage that will help inform residents regarding the changes anticipated with dam removal. The KRRC has committed to implementing this measure in its Recreation Facilities Plan. (EIS, page 3-555.) However, this measure is not sufficient to reduce the impact to less than significant. Thus, the Proposed Project would have a significant impact on recreation for environmental justice communities. (EIS p. 3-545, 3-546).

The Proposed Project could result in a significant impact associated with an increase in traffic in excess if road capacity or design or impairment of the safety or performance of the circulation system, which would affect environmental justice communities located near the Proposed Project. (Potential Impact 3.22-1; EIS Section 3.8.3.4, pages 3-457 to 3-458). As discussed in the Traffic and Transportation section, the Proposed Project includes a Traffic Management Plan, and KRRC is required to implement Mitigation Measure TR-1. However, these measures are insufficient to fully mitigate the impact.

The Proposed Project would result in significant impacts to air quality that would be experienced by environmental justice communities within the Proposed Project area. (Potential Impact 3.9-1). As described in the Air Quality section, implementation of Mitigation Measures AQ-1 through AQ-5 emissions would reduce emissions of PM10 to less than significant and would result in reduced but still significant impacts from NOx.

The Proposed Project would result in significant impacts to noise and vibration to residents near Copco No. 1, Copco No. 2, and Iron Gate dams belonging to environmental justice communities. (For more information, see EIS Section 3.15 Air Quality, and Potential Impacts 3.23-1, 3.23-2, 3.23-4, 3-23.5, 3.23-6). As described in more thoroughly in those documents, though the Proposed Project has incorporated change in a Noise and Vibration Control Plan that would minimize short-term outdoor noise, the significant impact is not feasible to fully mitigate or avoid.

The State Water Board finds that the Proposed Project will have a disproportionate impact on environmental justice communities within a 5-mile radius of the Proposed Project boundary and within a 1-mile buffer of the Klamath River downstream of the project facilities to the confluence of the Klamath River and Humbug Creek. Plans incorporated into the Project and the required Mitigation Measures reduce the impact on environmental justice communities. KRRC is also required to conduct outreach to

environmental justice communities regarding mitigation of impacts to slope stabilization, sediment release, and groundwater resources. (EIS, p. 3-556). As discussed above, KRRC has committed to implementing the Recreation Facilities Plan, which includes multi-lingual signage for outreach for environmental justice communities. Although these measures will reduce the impact, the Proposed Project will have a disproportionate impact on environmental justice communities.

Statement of Overriding Considerations

As stated above, the State Water Board finds that the Proposed Project would result in significant and unavoidable impacts on environmental justice communities related to aquatic resources, recreation, traffic, aesthetics, air quality, and noise. The Proposed Project would have numerous environmental benefits as discussed in the EIR and EIS, including improved water quality, reduced incidence of disease in juvenile salmon, restoration of historical anadromous fish habitat, and elimination of fish passage barriers. The Proposed Project would also provide social benefits to environmental justice communities, including reduced adverse health impacts caused by reservoir fisheries, increased recreational opportunities, and reduction of wildfire risk in environmental justice communities. (EIS, p. 3-553, 3-554.) The Proposed Project would also provide social and economic benefits to Tribes. Benefits to water quality would and the salmonid fisheries allow restoration and continuation of Tribal practices and traditions that have been harmed in the past. In addition, Tribes would receive economic benefits from restored subsistence and commercial fishing. (EIS, p. 3-506). The overall social, economic, and environmental benefits support the State Water Board's approval of the Proposed Project, despite the significant and unavoidable impacts to aquatic resources, recreation, traffic, aesthetics, air quality, and noise experienced by environmental justice communities.

The State Water Board finds that the Proposed Project will have a disproportionate impact on environmental justice communities. As discussed above, the Proposed Project has incorporated Plans and Mitigation Measures to address the impact to environmental justice communities. Environmental justice communities would also benefit from the restoration goals of the Proposed Project. The overall social, economic, and environmental benefits support the State Water Board's approval of the Proposed Project, despite the disproportionate impact on environmental justice communities.

Conclusion

The State Water Board recognizes that the Proposed Project would cause significant and unavoidable impacts to environmental justice communities. As described above, the Proposed Project would result in significant and unavoidable impacts on environmental justice communities related to aquatic resources, recreation, traffic, aesthetics, air quality, and noise. The Proposed Project would have a disproportionate effect on environmental justice communities. As described above, the Proposed Project has incorporated Plans and required Mitigation Measures to ameliorate the impacts to

environmental justice communities, including required to conduct outreach to regarding mitigation of impacts to slope stabilization, sediment release, and groundwater resources. Importantly, the Proposed Project would also provide numerous benefits to environmental justice communities through achievement of the Proposed Project's objectives, including restoration of the salmonid fishery, increased commercial and subsistence fishing, and restoration of Tribal practices and traditions. The long-term environmental, social, and economic benefits of the Proposed Project outweigh the significant, unavoidable impacts to environmental justice communities.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Public Safety

EIS, Section 3.14.3 finds that the Proposed Project raises safety concerns related to the potential for people to be below the dams or in reservoirs during dam removal, and from construction and demolition site hazards, as well as from traffic hazards, but that changes or alterations have been required in or incorporated into the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, 15091(a)(1).)

The KRRC has submitted Health and Safety Plan, Oregon and California Traffic Management Plans, and an Emergency Response Plan which fully mitigate this potential impact. (EIS, page 3-563.)

Utilities and Service Systems

Overview

Unlike many other projects, the Proposed Project would result in reduced long-term utility and services use due to the reduction of use from the operation of the hydropower facilities. Therefore, the majority of the impact analysis focuses on potential short-term, construction-related impacts associated with construction activities. Of primary concern for short-term impacts is the export of solid waste from construction during construction activities before, during, and after dam removal and reservoir drawdown. As discussed in detail in EIR Volume I Section 3.18, the State Water Board concludes that Potential Impacts 3.18-1, 3.18-2, 3.18-3, and 3.18-4 would not be significant.

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on utilities and service systems. Of primary concern for short-term impacts is the export of solid waste from construction during construction activities before, during, and after dam removal and reservoir drawdown.

The Proposed Project includes elimination of some of the existing recreational sites, resulting in removal of the associated wastewater facilities. As part of the removal of existing systems, or for any new recreational facility proposed, each facility would need to meet applicable wastewater system design requirements. The Proposed Project would also make use of portable chemical toilet facilities during construction activities, with wastes disposed of by the toilet providers. Since the total area of construction-related activities for the Proposed Project amounts to greater than one acre, the Proposed Project would be required to obtain coverage under the State Water Board Construction General Permit (2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (CGP) (EIR, pages 3-928 to 3-929).

There is no existing formal stormwater collection system in the Area of Analysis for utilities and service systems. Each of the proposed construction areas, including staging, stockpiling, on-site disposal, and access-related areas, must be covered by the CGP. The Proposed Project would not require construction of new stormwater drainage facilities or expansion of existing facilities (EIR, page 3-929).

Overall, the total volume of waste generated by the Proposed Project would be approximately 1.4 million cubic yards (see EIR Volume I Table 2.7-3 for estimated quantities of waste disposal for Copco No. 1 Dam, Table 2.7-5 for Copco No. 2 Dam, and Table 2.7-7 for Iron Gate Dam). For the Proposed Project, the vast majority of waste (i.e., soil and concrete) generated by demolition of the Lower Klamath Project dam complexes would be disposed of onsite and would not require transport to a landfill, thereby providing a substantial diversion of wastes meeting the County's Assembly Bill (AB) 939 requirements. Waste material exported from the Proposed Project sites would be disposed of at the Yreka Transfer Station or hauled by the contractor, most likely to the Dry Creek Landfill. Disposal of approximately 700 tons of treated wood waste from the wooden staves at Copco No. 2 Dam, where the treated wood is considered a hazardous material, would most likely be transferred to Anderson Landfill in Anderson, California. Anderson Landfill is a Class I facility, lined to prevent contamination of underlying soils and groundwater, and permitted to accept hazardous waste, including treated wood waste (EIR, page 3-930)

Based on the anticipated volume of waste generation for the Proposed Project and the above identified capacities for local landfill facilities (described in EIR Volume I Section 3.18.2.4 Solid Waste), there is sufficient permitted capacity to accommodate the solid waste disposal needs of the Proposed Project, in keeping with applicable statutes and regulations related to solid waste.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on utilities and service systems and no statement of overriding consideration is needed for these resources.

Aesthetics

Overview

Removal of the Lower Klamath Project could affect aspects of scenic quality throughout the Klamath River in California, including aspects like water clarity, fish viewing opportunities, and riparian and channel characteristics of the river downstream of the dams. However, potential aesthetic effects on these aspects would decrease with distance downstream from the Lower Klamath Project as the river is affected more by tributary inputs and less by the dams and associated facilities. Therefore, the primary Area of Analysis for aesthetics is within the viewshed of the Lower Klamath Project reservoirs, which includes the proposed Limits of Work in California (i.e., Copco No. 1, Copco No. 2, and Iron Gate dams, reservoirs, and associated facilities, and the areas identified as construction/demolition areas and staging areas) plus a buffer to the ridgeline surrounding the reservoirs. The secondary Area of Analysis for aesthetics includes those areas within view of the Klamath River downstream from Iron Gate Dam to the confluence with the Shasta River (RM 179.5), as well as the portion of the Klamath River extending upstream from Copco No. 1 Reservoir to the Oregon-California border, because these river reaches may be affected by removal of the upstream dams.

The Final EIR examines the potential effect of the Proposed Project on the existing character of the landscape, views, changes to scenic elements of a landscape, visual character or quality of the site and its surroundings, and sources of substantial light or glare that would adversely affect day or nighttime views in the area. As discussed in detail in EIR Volume Section 3.19 Aesthetics, the State Water Board concludes that Potential Impacts 3.19-1, 3.19-2, 3.19-3, 3.19-4 (long-term), 3.19-5, and 3.19-6 would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project include long-term improvements in visual water quality from reduced algal bloom, which would be beneficial. In addition to visual water quality improvements, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects on terrestrial resources.

CEQA Findings

Potential Impact 3.19-4 (short term); EIS Section 3.9.3, page 3-465[17] (up to five years)

The State Water Board finds that visual changes resulting from reservoir drawdown, dam removal and restoration, including temporarily bare/unvegetated banks, in combination with construction equipment and fugitive dust, would be a significant environmental impact over for up to five years and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).) As proposed in the Reservoir Area Management Plan (which has been updated issuance of the 2020 EIR), manual revegetation would occur quickly following reservoir drawdown while the sediment deposits are still wet. In the short term, all exposed areas would be hydroseeded. Woody vegetation would also be planted in the year immediately following drawdown. Based on monitoring results, reseeding and replanting would occur again, as needed, for the following five years. Until the restoration is complete, some areas of the reservoir footprints could appear barren and/or sparsely vegetated.

Visual effects would continue for approximately 3-5 years following construction activities until vegetation becomes established at the sites in densities and species compositions similar to the adjacent landscape. (EIS, page 3-465). As discussed in Volume III Attachment 1 Section 3.19.5, *Aesthetics – Potential Impacts and Mitigation*, the exposure of previously inundated areas could result in a short-term (temporary) change in the Bureau of Land Management's (BLM) Visual Resource Management (VRM) class, from VRM Class III (level of visual change to the characteristic landscape is moderate) to VRM Class IV (level of visual change to the characteristic landscape is high), for those key observation points associated with the Lower Klamath Project facilities and located within the reservoir viewshed (C1 to C7, FC5, IG1 to IG8; see Volume III Attachment 1 Figure 3.19-2 and Table 3.19-3) because exposure of the reservoir footprints may dominate the view and be the major focus of viewer attention prior to vegetation reestablishment. This would be a significant and unavoidable impact. In areas where the VRM analysis was not conducted, the exposure of previously inundated areas would cause a substantial adverse effect on scenic vistas with views of the reservoir footprint in the initial years after drawdown, since the extent of the change to the existing landscape would dominate the overall public view and would be inconsistent with the existing open water reservoir views and the natural vegetation patterns above the reservoir shorelines. This also would be a significant and unavoidable impact. (See also EIS, page 3-464,) Additionally, the movement of construction equipment and the associated fugitive dust could create a visual impact

[17] The EIS and EIR separate analysis of visual impacts differently. This findings document maintains the separation of lighting from other visual impacts, and includes changes from and reference to the EIS analysis as appropriate in both impacts. It then separately makes findings regarding the EIS-only impact of resident-perspective loss of reservoir habitat.

that is contrasting and inconsistent with the natural views in the short term. The magnitude of such changes would be smaller than the reservoir-wide impacts discussed above. (EIS, page 3-464.)

It is not feasible to mitigate these near-term impacts because plants and vegetation planted in exposed areas would need time to grow.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in significant short-term visual changes resulting from reservoir drawdown and restoration including temporarily bare/unvegetated banks.

Under the Continued Operations with Fish Passage, No Action, and No Project alternatives, the impact would be avoided because the Lower Klamath Project dams would not be removed and short-term visual impacts related to reservoir drawdown would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Proposed Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.19-7, EIS Section 3.9.3, page 3-465[18] (temporary)

The State Water Board finds that temporary lighting erected for nighttime construction activities during dam demolition, and security lighting that might be required during deconstruction would be a significant environmental impact over the short term and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

During peak construction periods (April through November of dam removal year 2, EIR Volume III Attachment 1 Table 2.7-8), nighttime construction activities could occur regularly. The EIR explains that temporary lighting could cause glare that would adversely affect nighttime views in the area, particularly for overnight visitors and residents near the Copco No. 1 Reservoir. The impact would occur because the area is rural with very little existing night lighting, and because construction lighting would be relatively intense, the impact on nighttime views would be a significant impact that would occur temporarily, until dam deconstruction was complete.

[18] The EIS and EIR separate analysis of visual impacts differently. This findings document maintains the separation of lighting from other visual impacts, and includes changes from and reference to the EIS analysis as appropriate in both impacts. It then separately makes findings regarding the EIS-only impact of resident-perspective loss of reservoir habitat.

The Proposed Project currently does not include measures that would reduce impacts to nighttime views cause by temporary construction lighting. The EIS similarly found that implementation of artificial lighting during construction activities would result in significant and unavoidable impacts. As discussed in Volume III Attachment 1 Section 3.19.5, *Aesthetics – Potential Impacts and Mitigation*, KRRC proposes that KRRC and the appropriate state or local agency would work together to develop recommended terms and conditions that should be adopted by FERC as conditions of approval for the Lower Klamath Project. However, overseeing development and implementation of measures to reduce impacts to nighttime views does not fall within the scope of the State Water Board's water quality certification authority, which is why impacts cannot be mitigated.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction would result in significant short-term impacts to nighttime views cause by temporary construction lighting (Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative). The No Action and No Project alternative would not involve construction and, therefore, would not result in construction-related lighting impacts. However, the No Action and No Project alternatives would not result in any benefits for environmental resources compared to the Proposed Project and would not meet the Project's restoration purpose and objectives, and so they are not environmentally superior.

*EIS Section 3.9.3, page 3-465*The State Water Board finds that there will be a significant impact to resident's views for the residences abutting Copco No. 1 Reservoir. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

As discussed in the EIS, at page 3-465, the change from an open-water, reservoir-view to a view that includes more natural river, canyon and valley vistas will be significant for all viewers. Whether the change is positive or adverse depends on the viewer's preference. Because homeowners abutting Copco No. 1 lake have presumably chosen to live in that location based on proximity to the reservoir and the open-water view, the change would be considered adverse from that perspective.

It is not feasible to mitigate these impacts because removal of the reservoir is integral to the Proposed Project, as well as the cause of the visual impact.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in significant short-term visual changes resulting from reservoir drawdown and restoration including temporarily bare/unvegetated banks.

Under the Continued Operations with Fish Passage, No Action, and No Project alternatives, the impact would be avoided because the Lower Klamath Project dams would not be removed and short-term visual impacts related to reservoir drawdown would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Proposed Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.19-4, EIS Section 3.9.3, page 3-465 (3-5 years)

As indicated above, reservoir drawdown, dam removal, and restoration under the Proposed Project would result in short-term visual changes, including the temporarily bare/unvegetated banks and construction equipment. Until the restoration is complete, some areas of the reservoir footprints could appear barren and/or sparsely vegetated, and construction equipment may move and generate unsightly dust. Because exposure of the reservoir footprints may dominate the view and be the major focus of viewer attention prior to vegetation reestablishment, the impacts would be significant and adverse. Once vegetation has reestablished, there would no longer be a visual impact. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in short-term visual impacts associated with exposure of reservoir footprints and construction activity.

The Proposed Project would have beneficial effects on views along the river. The Proposed Project would reduce the occurrence and severity of algal blooms (Potential Impact 3.4-2). The removal of the dams is expected to reduce the river's summer algae concentrations, which result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. These improvements would be more noticeable from on-river and riverside viewpoints, and much less noticeable from river canyon roadway and community viewpoints. These long-term changes in visual water quality from reduced algal bloom would be beneficial. In addition to visual water quality improvements, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as endangered under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable visual impact associated with reservoir drawdown.

Potential Impact 3.19-7, EIS Section 3.9.3, page 3-465 (temporary)

As indicated above, the Proposed Project area is rural with very little existing night lighting, and because construction lighting would be relatively intense, the impact on nighttime views would be a significant impact that would occur temporarily, until dam deconstruction was complete. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in short-term impacts to nighttime views caused by temporary construction lighting.

The Proposed Project would have beneficial effects on views along the river. The Proposed Project would reduce the occurrence and severity of algal blooms, which would result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. The long-term benefits of the Proposed Project, as discussed above, support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impact to nighttime views associated with construction or security lighting.

EIS Section 3.9.3, page 3-465

As indicated above, draining of the project reservoirs would have a short-term, adverse visual effect. The barren reservoir areas would result in a considerable change and would be highly visible to nearby viewers. Construction activities and restoration efforts at or near the Project facilities would also result in temporary, adverse visual effects. Approval of the Proposed Project thus would result in short-term significant impacts to visual elements until vegetation becomes established at the sites in densities and species compositions similar to the adjacent landscape.

Reservoir areas that are converted to flowing river segments would lose open-water and lake vistas in exchange for more natural river, canyon, and valley vistas. Over the long term, the exposed reservoir footprints would be revegetated to match the surrounding plant communities, resulting in a permanent, significant change from open water to a vegetated landscape. This would be a permanent, significant effect on all viewers. However, viewers may interpret the effect as either beneficial or adverse, depending on their preference. For those who prefer views of a free-flowing river the proposed action would be a permanent, beneficial effect.

Conclusions

As indicated above, the Proposed Project would result in significant unavoidable impacts associated with the near-term visual changes resulting from reservoir drawdown and construction activities, including temporarily bare/unvegetated banks, short-term impacts to nighttime views in the area from new sources of substantial light or glare from construction or security lighting, and, for residences abutting Copco No. 1 Reservoir, from loss of open-water lake views.

The removal of the dams is expected to reduce the river's summer algae concentrations, which result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. These long-term changes in visual water quality from reduced algal bloom would be beneficial. This benefit is also related to the Project objective of improving the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River. In addition to visual water quality improvements, the Proposed Project would have broad environmental benefits, as it is projected to: improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects to terrestrial resources.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the aesthetic impacts of the Proposed Project to be acceptable.

Recreation

Overview

The Proposed Project includes components, such as dam removal, that could have a significant effect on recreation but are necessary to accomplish the intended long-term water quality and fish passage improvements.

The Final EIR examines the potential effect of the Proposed Project on river- and reservoir-based recreation opportunities, activities, and settings within the Area of Analysis, short-term and long-term effects on access, flow-dependent recreational activities, recreational fishing, and other recreational activities associated with the existing Klamath River corridor and reservoir recreational facilities within the Area of Analysis. As discussed in detail in EIR Volume III Attachment 1 Section 3.20 Recreation, and EIS, Section 3.7, the State Water Board concludes that Potential Impacts 3.20-1, 3.20-2 (regional), 3.20-3, 3.20-4, 3.20-5 (Middle and Lower Klamath River), 3.20-6 and 3.20-7 (long-term) would either not be significant or would be beneficial. Beneficial effects of the Proposed Project include an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach, potential increase in the number of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months, removal of the dams would help eliminate barriers to volitional fish passage in the Klamath River upstream of the Lower Klamath Project, which would beneficially affect recreational

fishing at these upstream locations, and improved water quality conditions would result in long-term beneficial effects for water-contact-based recreational activities.

Additionally, the EIS requires the KRRC to consult with American Whitewater, in addition to Upper Klamath Outfitters Association, to schedule construction activities and access restrictions during construction to minimize adverse effects on whitewater boaters, and to consult with the Shasta Indian Nation on the naming of future recreation sites.

CEQA Findings

Potential Impact 3.20-2 and EIS Section 3.7.3.1, page 3-422 to 3-423 (local)

The State Water Board finds that the Proposed Project would result in a significant local impact to reservoir recreation. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The Proposed Project would drain existing reservoirs, and remove existing lake-side recreation sites, including campgrounds and day use areas that provide access for activities such as picnicking and shore-based fishing. While numerous other lakes and reservoirs in the region provide similar recreation opportunities, the impact on locally available, open-water recreation would be significant. Residents along Copco No. 1 Reservoir would lose direct access to open-water recreation activities, which would result in a significant impact on their access.

The Proposed Project includes increased access to riverine recreation, but this does not provide local open-water recreational activities. Because the Proposed Project removes the reservoirs, which are the same locus as open-water recreation, it is not feasible to mitigate the impact.

Any of the alternatives to the Proposed Project that involves removal of Copco No. 1 and Iron Gate Dam (Partial Removal, Two Dam Removal, and Three Dam Removal alternatives) would have the same impact on local open-water recreation.

Under the Continued Operations with Fish Passage Alternative, recreational activities would remain available, so the loss of whitewater boating opportunities in the Hell's Corner Reach would be similar to those described for the Proposed Project. As discussed above, this alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so is not environmentally superior.

The Continued Operations with Fish Passage, No Project and No Action alternatives would not involve the removal of Copco No. 1 and Iron Gate reservoirs, they would not impact local access to the associated recreation activities. However, these alternatives would result in continuation of some of the stresses that currently affect Chinook salmon populations. The presence of dams and reservoirs under the Continued Operations

with Fish Passage, No Project and No Action alternatives would continue to cause seasonally poor water quality, and high late summer and early fall water temperatures, allowing some conditions favorable for the transmission of fish disease to persist. The Continued Operations with Fish Passage, No Project and No Action alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not meet the Project's restoration purpose and objectives, and so are not environmentally superior.

Potential Impact 3.20-5

The State Water Board finds that the Proposed Project would result in a significant impact to whitewater boating opportunities in the Hell's Corner Reach (within the upper portion of the Hydroelectric Reach) for three months during the late summer and early fall and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).) The EIR and EIS explain that in the Hell's Corner Reach, there would be loss of acceptable flows for whitewater boating opportunities with the Proposed Project as compared to existing conditions due to the loss of hydropower operations. The minimum flow necessary for whitewater boating in this reach is estimated to be between 1,000 cfs and 1,300 cfs. Klamath River flow in the high demand months of July to September are expected to remain below 1,000 cfs under the 2013 BiOp Flows except during very wet water years (i.e., exceedance probability less than 5 percent), and under the 2019 BiOp Flows except during wet and very wet water years (i.e., exceedance probability less than 10 percent), based on an evaluation of flow exceedance curves at Keno Dam (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*). Following dam removal, there would be an estimated reduction of boating days in the reach of 43% for flows between 1,000 and 1,500 cfs, and a reduction of 57% for flows between 1,300 and 1,500 cfs. (EIS, Table 3.7-6, page 3-436.)

The impact would occur within the Hydroelectric Reach because removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations, which would reduce flows acceptable for recreational whitewater boating under the Proposed Project (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*). It is not feasible to mitigate the impact because it is not feasible to increase recreational whitewater rafting flows in this reach absent J.C. Boyle Dam. However, the potential impacts would be lessened in light of other available opportunities, and outweighed by other beneficial effects.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of J.C. Boyle dam (i.e., Partial Removal Alternative, No Hatchery Alternative) would result in significant impacts to whitewater boating opportunities in the Hell's Corner Reach because removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations. The Two Dam and Three Dam Removal Alternatives would not remove the J.C. Boyle Dam. However, J.C. Boyle hydroelectric peaking operations and/or recreation flows would not occur under this alternative since

Copco No. 1 and Iron Gate dams would not be present to reregulate flows downstream. Therefore, the Two Dam and Three Dam Removal Alternative would also result in significant impacts whitewater boating opportunities in the Hell's Corner Reach.

Under the Continued Operations with Fish Passage Alternative, recreational flows in the Hydroelectric Reach would be limited by mandatory conditions, so the loss of whitewater boating opportunities in the Hell's Corner Reach would be similar to those described for the Proposed Project. As discussed above, this alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so is not environmentally superior.

Since the No Project and No Action alternatives would not involve dam removals, it would not eliminate the hydropower peaking operations, which would reduce flows acceptable for recreational whitewater boating under the Proposed Project. However, this alternative would result in continuation of some of the stresses that currently affect Chinook salmon populations. The presence of dams and reservoirs under the No Project and No Action alternatives would continue to cause seasonally poor water quality, and high late summer and early fall water temperatures, allowing some conditions favorable for the transmission of fish disease to persist. The No Project and No Action alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not meet the Project's restoration purpose and objectives, and so are not environmentally superior.

Potential Impact 3.20-7 (short-term), EIS Section 3.7.3.4, page 3-426 (short-term)

The State Water Board finds that there will be a short-term, significant impact on the National Wild and Scenic River listing characteristics. It is not possible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The Proposed Project will discharge sufficient suspended sediments during drawdown and decommissioning to reduce water clarity, "making it more difficult for fish to seek food, reduce recreational fishing success, and be viewed as a non-natural coloration of the water by recreational boaters." (EIS, page 3-426.) This impact will be limited to the short term, as more normal sediment transport processes are re-established.

As described in the EIS (page 3-426), it is not possible to meaningfully reduce the suspended sediments during drawdown and decommissioning.

Any of the alternatives to the Proposed Project that involves removal of dam removal (Partial Removal, Two Dam Removal, and Three Dam Removal alternatives) would result in significant sediment releases affecting water clarity, and the associated Wild and Scenic River listing characteristics.

Under the Continued Operations with Fish Passage Alternative, there would be sediment releases from passage construction, but these would likely be substantially less under dam-removal alternatives.

The No Project and No Action alternatives would not involve dam removal or other significant construction, and would not change the existing conditions regarding Wild and Scenic River listing characteristics, including ongoing impairments to fishing from fish stressors and the ongoing aesthetic and recreational impairments from algal blooms. The Continued Operations with Fish Passage, No Project and No Action alternatives result in significantly fewer benefits (or no benefits under the No Project and No Action Alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior..

Statement of Overriding Considerations

Potential Impact 3.20-2

As indicated above, removal of the Project reservoirs would eliminate existing lake-side recreation sites, including campgrounds and day use areas that provide access for activities such as picnicking and shore-based fishing. This would result in a significant impact to reservoir-based recreation. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in recreational impacts associated with the loss of the reservoirs and local open-water recreational activities.

However, in addition to the cumulative benefits described above, the Proposed Project would have the following beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the impacts associated with loss of the reservoirs and local open-water recreational activities.

Potential Impact 3.20-5

As indicated above, removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations, which would affect recreational flows within Hydroelectric Reach under the Proposed Project (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*). This would result in a significant impact to whitewater boating opportunities in the Hell's Corner Reach (within the upper portion of the Hydroelectric Reach) for three months during the late summer and early fall. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in recreational impacts associated with the loss of

acceptable flows for whitewater boating opportunities as compared to existing conditions due to the loss of hydropower operations.

Beneficial Recreation effects associated with the Proposed Project would include: an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach; potential increase in the number of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months; removal of the dams would help eliminate barriers to volitional fish passage in the Klamath River upstream of the Lower Klamath Project, which would beneficially affect recreational fishing at these upstream locations; and improved water quality conditions would result in long-term beneficial effects for water-contact-based recreational activities.

Potential Impact 3.20-7 (short-term)

As indicated above, removal of the Project dams would result in significant sediment releases affecting water clarity, and the associated Wild and Scenic River listing characteristics. This would result in a significant impact to the Klamath River's National Wild and Scenic River listing. This impact would be temporary in the short term, until normal sediment transport processes are re-established. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in recreational impacts associated with the Klamath River's National Wild and Scenic River listing.

However, in addition to the cumulative benefits described above, the Proposed Project would have the following beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the impacts associated with the Klamath River's National Wild and Scenic River listing.

Conclusions

As indicated above, the Project would result in significant unavoidable impacts associated with the loss of open-water recreation opportunities, changes to or loss of river conditions that support whitewater boating in the Hell's Corner reach in the upper portion of the Hydroelectric Reach, and the Klamath River's National Wild and Scenic River listing. The proposed project would have a number of beneficial effects related to recreation including, an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach; potential increase in the number

of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months; increased recreational fishing opportunities; and improved water quality for water-contact-based recreational activities. Individually and collectively, the significant and unavoidable recreational effects of the Proposed Project are outweighed by the recreational benefits of the Proposed Project and are therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

The above stated reasons summarize the benefits of the proposed Project. Along with the objectives stated at the beginning of this document, the State Water Board finds that any one of the environmental, technological, policy, and economic benefits of the proposed Project set forth above is sufficient by itself to warrant approval of the proposed Project. These overriding considerations justify adoption of the proposed Project and certification of the completed Final EIR. This determination is based on the findings herein and the evidence in the record.

Hazards and Hazardous Materials

Overview

The short-term construction-related activities associated with the Proposed Project and impacts could cause the removal of existing hazardous materials the transport, use, disposal and potential release of hazardous materials. An increased need for emergency services is also likely during construction activities and, as described in Volume I Section 3.22 Transportation and Traffic, project-related equipment and debris hauling may conflict with the ability to provide required emergency services. Consideration has been provided for the potential for accidental release of hazardous materials during routine transport along roadways that would be shared with public vehicles. In addition, the loss of reservoirs could also result in potential long-term impacts to future fire-fighting.

The Final EIR examines the potential effect of the Proposed Project related to hazards and hazardous materials. As discussed in detail in EIR Volume Section 3.21 Hazards and Hazardous Materials, the State Water Board concludes that Potential Impacts 3.21 -3, 3.21-5, 3.21-6, and 3.21-8 (short-term) would not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with hazards and hazardous materials are set out below.

CEQA Findings

Potential Impact 3.21-1, EIS Sections 3.14.3 & 3.14.4, pages 3-563 and 4-27

The State Water Board finds that the Proposed Project could result in potentially significant effects associated with construction-related activities that could result in substantial exposure to hazardous materials through the routine transport, use, or disposal of hazardous materials. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that in the short term, construction-related dam removal would involve routine transport, use, and disposal of general construction waste materials (e.g., concrete, rebar, building waste, power lines; see also Volume III Appendix B: Definite Plan – Sections 5.3–5.5) and some hazardous materials (e.g., treated lumber, asbestos, lead, PCBs, fuels, gases, etc.) would be encountered, used, transported and disposed of during those construction activities, which could result in short-term significant impacts.

Recommendations of the Phase I and Phase II reports prepared for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include compliance with existing referenced regulations, and development of asbestos abatement project design manuals with technical specifications and abatement plans.

The Proposed Project includes an assessment of roads, intersections, bridges and culverts (Volume II Appendix B: Definite Plan – Appendix K) within the Area of Analysis for hazards and hazardous materials and proposes a number of improvements to help reduce the potential for accidental release of hazardous materials during transport of these materials to and from the dam sites. The proposed replacements and upgrades to transportation structures, as well as proposed construction-related traffic management, including signage, flaggers, and traffic coordination (California Traffic Management Plan), would reduce the risk of traffic accidents that could result in exposure to quantities of hazardous, or acutely hazardous, materials that would be harmful to the public or the environment (EIS page 3-563).

Further, existing federal and state regulations require the KRRC and its construction contractors to undertake a number of measures related to hazardous materials. KRRC is developing a dam safety program that would ensure that removal of the Proposed Project would be undertaken in a manner that minimizes risk to people, structures, infrastructure, and the natural resources of the Klamath River Basin (Volume II Appendix B: Definite Plan – Section 3). The KRRC has identified potential failure modes and incorporated mitigations measures, as appropriate, into the management plans (2020 Definite Decommissioning Plan, page 19).

The KRRC and its contractors are also required to 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[19]), and ongoing amendments during the life of the Proposed Project.). Hazardous materials, substances, and waste within the Area of Analysis for hazards and hazardous substances are regulated by several other federal and state laws and policies. Compliance with required regulations would substantially minimize the potential impact of hazardous materials on the public and the environment during the routine transport, use, or disposal of hazardous materials (Volume III, Attachment 1, pages AT1-979 to AT1-983).

The Proposed Project also includes a Hazardous Materials Management Plan (Volume II Appendix B: Definite Plan – Appendix O3 Hazardous Materials Management Plan), which indicates requirements for handling, disposal, testing requirements, and decontamination of hazardous materials. The Hazardous Materials Management Plan also notes that any additional hazardous materials noted during the Phase I site visits and Phase II investigations would be included in an updated Hazardous Materials Management Plan and the contractor would sample and test for asbestos, lead, and PCB's at all structures to be removed. The Hazardous Materials Management Plan is required to comply with, among other regulations, California Health and Safety Code, title 27, division 20, chapter 6.95, sections 25500 through 25545, and California Code of Regulations title 19, division 2, chapter 4.

In addition to the measures included in the Proposed Project, Mitigation Measure HZ-1 would be necessary to ensure that adherence to existing regulations are included in contractor bid documents. This includes that the findings and recommendations of the Phase I and Phase II Environmental Site Assessment reports would be added to the Hazardous Materials Management Plan and Health and Safety Plan. With implementation of Mitigation Measure HZ-1, potential impacts due to exposure to hazardous materials during the proposed construction-related activities would be less than significant (Volume III, Attachment 1, pages AT1-979 to AT1-983).

Mitigation Measure HZ-1 − Hazardous Materials Management.

No later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities, the KRRC shall submit a Final Hazardous Materials Management Plan (Final Hazardous Materials Management Plan) to the State Water Board Deputy Director for review and approval.

[19] On September 8, 2022, the Construction General Permit was superseded by Order WQ 2022-0057-DWQ, NPDES No. CAS000002, with an effective date of September 1, 2023.

The State Water Board has authority to review and approve any final Hazardous Materials Management Plan through its water quality certification under Clean Water Act Section 401. The State Water Board has issued a draft water quality certification which sets forth monitoring and adaptive management requirements for any Hazardous Materials Management Plan to meet, as Condition 11. Additionally, the Oregon Department of Environmental Quality has issued a water quality certification that sets forth water quality monitoring and adaptive management conditions for points upstream of California.

Consistent with the above, the Final Hazardous Materials Management Plan shall include any modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff that provide the same or better level of protection regarding procedures for proper disposal or abatement of hazardous materials encountered during Proposed Project activities; proper storage, containment, and response to spills caused by the Proposed Project; and proper removal and disposal of septic tanks as part of the Proposed Project.

The Final Hazardous Materials Management Plan shall also describe how the elements of the KRRC's proposed Health and Safety Plan (Appendix B: Definite Plan – Appendix O4), the Spill Prevention, Control, and Countermeasure Plan (Appendix B: Definite Plan – Appendix O4), the Emergency Response Plan (Appendix B: Definite Plan – Appendix O4), and the Traffic Management Plan (Appendix B: Definite Plan – Appendix O2) are coordinated together, and as such, adequately protect water quality with respect to hazardous materials management. In addition, the findings and recommendations of the Phase I and Phase II reports for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include development of a Soil and Groundwater Management Plan (SGMP) and Waste Management Plan (WMP) for each facility, compliance with existing referenced regulations, and development of abatement project design manuals with technical specifications and abatement plans.

The KRRC shall implement the Final Hazardous Materials Management Plan upon receipt of State Water Board Deputy Director approval and any changes to the Hazardous Materials Management Plan must be approved by the State Water Board Deputy Director prior to implementation.

The KRRC shall provide monthly reporting to the State Water Board detailing the volumes of hazardous materials and wastes that were cleaned up and disposed of from site construction activities and any other modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff.

Additionally, FERC recommends that KRRC engage in specific outreach to identified vulnerable communities on emergency preparedness, including information and solicitation of input on planning, including preparedness, response, recovery, and mitigation. (See EIS, pages 3-555, 3-563.) The EIS notes that this measure, while

recommended, is not required to reduce the impact to less than significant. (EIS, page 3-563.) FERC staff recommendation Bullet 13 is:

"Modify the Oregon Traffic Management Plan, California Traffic Management Plan, and Emergency Response Plan (subplans of the Construction Management Plan) and the FMP to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities."
Potential Impact 3.21-2, EIS Sections 3.14.3 & 3.14.4, page 3-563

The State Water Board finds that the Proposed Project could result in potential upset and/or accidental release of hazardous materials that result in substantial exposure to the environment during the short-term and this would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1).

See discussion above Potential Impact 3.21-1. The EIR explains that a reasonably foreseeable condition that could result in an upset involving the release of hazardous materials into the environment would occur from such natural events, such as earthquakes, floods or fires or from accidents during construction activities. Fuel storage tanks used for construction could rupture or spill and hazardous materials could be carried away by floodwaters. Proposed Project workers, the public sharing the roads with construction vehicles, and/or the environment could be exposed to harmful levels of hazardous materials due to accidental releases during construction activities. Accidental release of hazardous materials (from vehicle fuels, solid waste, materials and supplies) could also occur during transport as a result of vehicular accidents due to increased construction-related traffic and/or as a result of inadequacies in the capacity, design or traffic control of the roads that would be used for construction-related activities (Figure 3.22-1). Any of these situations under the Proposed Project would result in a significant impact.

Volume II Appendix B: Definite Plan – Appendix O2 Traffic Management Plan, Appendix O3 Hazardous Materials Management and Appendix O4 Emergency Response Plan complement one other with respect to pre-planning and response efforts to minimize the risk of potential upset and accident conditions involving the release of hazardous materials. Since the responsibility of finalizing these plans fall on the KRRC and the construction contractors, Mitigation Measure HZ-1 assures that the contractor(s) are aware of the federal and state requirements and submit updated plans that are geared towards their strategies and methods for addressing this issue.

With implementation of Mitigation Measure HZ-1, impacts due to potential upset and/or accidental release of hazardous materials that result in substantial exposure to the environment during the proposed short-term, construction-related activities would not result in a significant impact.,

Additionally, FERC recommends that KRRC engage in specific outreach to identified vulnerable communities on emergency preparedness, including information and solicitation of input on planning, including preparedness, response, recovery, and mitigation. (See EIS, pages 3-555, 3-563.) The EIS notes that this measure, while recommended, is not required to reduce the impact to less than significant. (EIS, page 3-563.) FERC staff recommendation Bullet 13 is:

"Modify the Oregon Traffic Management Plan, California Traffic Management Plan, and Emergency Response Plan (subplans of the Construction Management Plan) and the FMP to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities."

Potential Impact 3.21-4

The State Water Board finds that the Proposed Project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could result in substantial exposure to hazardous materials. This would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains The Proposed Project is not located on a site which is currently included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, the type of use and activities and the length of time these activities have been occurring within the Proposed Project Area suggest the possibility that contaminated sites/soils exist on site. In addition, the Proposed Project could result in an impact from known and unknown contaminants (such as dioxins) if, during construction activities, these materials are not handled and disposed of properly. Construction activities include drilling and cutting into the large quantities of concrete slated for removal under the Proposed Project (i.e., greater than 100,000 yd3) (Volume I Table 2.7-3, Table 2.7-4, and Table 2.7-7) could result in dust that releases toxic substances and would be harmful to the public or the environment, which would be a significant impact.

The State Water Board received a submittal from PacifiCorp dated December 30, 2019 (PacifiCorp 2019), which included redacted versions of Phase I and Phase II reports (KRRC 2019 (c)-(l)). These reports disclosed the types and locations of hazardous materials at the various facilities, which is consistent with information in the Definite Plan, Volume I Appendix O-3 Hazardous Materials Management Plan. In addition, the findings and recommendations of the Phase I and Phase II reports for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include development of a Soil and Groundwater Management Plan (SGMP) and Waste Management Plan (WMP) for each facility, compliance with existing referenced regulations, and development of asbestos abatement project design

manuals with technical specifications and abatement plans (Volume III, Attachment 1, pages AT1-979 to AT1-983).

In addition to the measures included in the Proposed Project, Mitigation Measure HZ-1 (included above) would be necessary to ensure that adherence to existing regulations are included in contractor bid documents. This includes that the findings and recommendations of the Phase I and Phase II Environmental Site Assessment reports would be added to the Hazardous Materials Management Plan and Health and Safety Plan. With implementation of Mitigation Measure HZ-1, potential impacts due to exposure to hazardous materials during the proposed construction-related activities would be less than significant (Volume III, Attachment 1, pages AT1-979 to AT1-984).

Since adoption of the EIR the KRRC has updated the draft plan, and submitted a California Hazardous Materials Management Plan to the FERC on December 14, 2021. The California Hazardous Materials Management Plan describes the measures that the KRRC will implement to manage hazardous waste and materials resulting from implementing the Project.

The EIS requires the KRRC to consult with Siskiyou County to address concerns raises in its comments on the Draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan (page 4-32). The EIS identifies that implementation of a Hazardous Material Management Plan during deconstruction and removal would minimize the potential for adverse effects from the transport, use, and disposal of hazardous materials (page lxviii).

Potential Impact 3.21-7, EIS Section 3.8.3.4, pages 3-457 to 3-458[20]

The State Water Board finds that the Proposed Project could result in a significant impact associated with construction-related traffic, which may interfere with emergency response on rural roads surrounding the Lower Klamath Project. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR's discussion of Potential Impact 3.21-7 explains that the Proposed Project could result in short-term construction-related impacts consisting of an increase in traffic on narrow rural roads from commuting workers, hauling of large equipment and disposal of wastes. (See also EIS section 3.8.3.4.) This additional traffic could result in

[20] The EIS analyzes traffic-related impacts together, while the EIR addresses them in multiple impacts. These findings maintain the EIS separation of the traffic into separate impacts, but incorporate the EIS as appropriate.

interference to emergency response vehicles as well as create a situation requiring additional need for emergency response due to personal and vehicular accidents, natural and worksite caused fires, and accidental releases of hazardous materials, particularly given the rural nature of the Area of Analysis for hazards and hazardous materials. This would be a significant impact.

However, the Proposed Project (Volume I Section 2.7.8.11 Emergency Response) contains a description of an Emergency Response Plan (for details see Volume II Appendix B: Definite Plan– Appendix O4). According to that document, construction contractors would be required to develop a Final Emergency Response Plan to develop and implement procedures to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies. To reduce potential impacts all construction workers would be required to possess the knowledge and resources to adequately respond to emergencies, where emergency preparation and work should be overseen by a designated health and safety manager. In addition, responding agencies/departments should be made aware of the activities during the construction period so that they can implement their existing regulatory framework, establish an emergency contact process, and undertake inspections as needed throughout project implementation.

The draft Traffic Management Plan (Volume II Appendix B: Definite Plan − Appendix O2) further notes that the KRRC's contractor would perform a risk assessment of all intersections and roadways as part of the final Traffic Management Plan. As explained below under Transportation and Traffic, implementation of Mitigation Measure TR-1 would require additional components beyond those listed as part of the Proposed Project (i.e., the final versions of the Traffic Management Plan and Emergency Response Plan) and these components would be necessary to adequately implement an Emergency Response Plan that addresses short-term construction-related impacts, consisting of an increase in traffic on narrow rural roads from commuting workers, hauling of large equipment and disposal of wastes, to the point that the potential impact would be less than significant. (Volume III Attachment 1 pages AT1-987-AT1-988.) In other words, the State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level. (Volume III Attachment 1 pages AT1-987-AT1-988.)

Since adoption of the EIR the KRRC has updated the draft plan, and submitted a California Traffic Management Plan to the FERC on December 14, 2021. The Traffic Management Plan describes the measures that the KRRC will implement to maintain efficient and safe movement of traffic through the Project work area. The KRRC has also negotiated a memorandum of understanding (MOU) with the county of Siskiyou

which addresses the County's regulatory interests with respect to traffic control, roadway alignment, and maintenance.

Additionally, the KRRC also submitted a Health and Safety Plan to the FERC on December 14, 2021. The Health and Safety Plan includes a Traffic Control Plan which is composed of two sub plans: a Traffic Management Plan (TMP), and a Traffic Incident Management Plan (TIMP).

The EIS indicates that the impact will be significant in the short term, due to an increase in traffic by construction personnel, hauling trucks and other heavy machinery during dam removal, which will have an adverse effect on congestion, road safety, and emergency response time within the Project area (pages 3-457 – 3-458).

Potential Impact 3.21-8 (long-term)

The State Water Board finds that the Proposed Project would result in a substantial increase in public's risk of loss, injury or death associated with wildland fires over the long-term where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source. The State Water Board finds that this is a significant impact that is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3).

The EIR's discussion of impact 3.21-8 explains that in the long term, the loss of the reservoirs, which are currently part of the existing conditions, would result in a substantial decrease in fire protection involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires within the Area of Analysis for public services. While the proposed dry hydrants would provide a source of water to ground crews for firefighting, they do not offer the same degree of access as helicopter use of the reservoirs for wildfires occurring in the vicinity of the Lower Klamath Project, for which the reservoirs are the closest and safest source of water for aerial crews. One option that would assist in mitigating this impact would be to include appropriately placed dip ponds within the Proposed Project's restoration areas.

Since adoption of the EIS, the KRRC has developed a final Fire Management Plan (FMP). The FMP includes measures that the KRRC will implement to reduce impacts associated with wildfires such as installation of an early detection monitoring system and the installation of dry hydrants. The KRRC will also purchase equipment to assist the local communities with defensible space and reducing risk of structure fires. Recommended Measure PS-1 recommends the KRRC and/or its Contractor(s) to develop, in consultation with the CALFIRE Siskiyou Unit, an updated Fire Management Plan that identifies long-term water sources for helicopter and ground crews (including construction and use of proposed dry hydrants, dip ponds, or other alternatives).

The EIS finds that the Proposed Project, together with the measures in the revised FMP, "would have a permanent, less than significant, adverse effect on the ability of state and federal wildland firefighting agencies to effectively respond to, and suppress, fires in the region. Access to open waterbodies for water scooping planes would be reduced by two reservoirs, but other bodies of water remain available, and other types of tanker planes and helicopters are also used for aerial firefighting. The construction of new water access sites would mitigate for the loss of existing reservoir boat ramps that are used to refill tanker trucks, resulting in a less than significant effect on fire suppression efforts. The installation of additional monitored detection system wildfire detection sites would have a long-term, significant, beneficial effect on the early detection of new fires in the region," (EIS, page 3-455.)

Overseeing development and implementation of terms and conditions relating to fire management does not fall within the scope of the State Water Board's water quality certification authority. The State Water Board anticipates that in the absence of the reservoirs, the identification and use of alternative water sources (e.g., dip ponds, river pools suitable for helicopter drafting, dry hydrants) for both ground and helicopter crews that are developed through the FERC process would significantly ameliorate response times and provide a level of protection to substantially reduce the public's risk of loss from wildfires, thereby reducing impacts to less than significant in many instances. However, where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the reservoirs would otherwise have been the nearest water source, long-term impacts to the public's risk of loss from wildfires remain significant and unavoidable.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Two Dam Removal Alternative, Three Dam Removal Alternative, No Hatchery Alternative) would result in significant impacts associated with suitable replacement water sources that cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source.

Under the Continued Operations with Fish Passage, No Action and No Project alternatives, dam removal would not occur and there would be no loss of Lower Klamath Project reservoirs. Therefore, no impact to suitable water sources for fighting wildfires would occur under these alternatives. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Action and No Project alternatives) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.21-8

As indicated above the loss of the reservoirs due to the Proposed Project, which are currently part of the existing conditions, would result in a substantial decrease in fire protection involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires within the Area of Analysis for public services. As explained above, mitigation/avoidance of this impact is not feasible, although the KRRC's most recent submittal to the State Water Board indicated that progress on eliminating this risk is moving forward. Approval of the Proposed Project thus would result in a significant impact due to a substantial increase in public's risk of loss, injury or death associated with wildland fires over the long-term where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source.

Since adoption of the EIS, the KRRC has developed a final Fire Management Plan (FMP). The FMP includes measures that the KRRC will implement to reduce impacts associated with wildfires such as installation of an early detection monitoring system and the installation of dry hydrants. The KRRC will also purchase equipment to assist the local communities with defensible space and reducing risk of structure fires. Recommended Measure PS-1 recommends the KRRC and/or its Contractor(s) to develop, in consultation with the CALFIRE Siskiyou Unit, an updated Fire Management Plan that identifies long-term water sources for helicopter and ground crews (including construction and use of proposed dry hydrants, dip ponds, or other alternatives).

The EIS finds that the Proposed Project, together with the measures in the revised FMP, "would have a permanent, less than significant, adverse effect on the ability of state and federal wildland firefighting agencies to effectively respond to, and suppress, fires in the region. Access to open waterbodies for water scooping planes would be reduced by two reservoirs, but other bodies of water remain available, and other types of tanker planes and helicopters are also used for aerial firefighting. The construction of new water access sites would mitigate for the loss of existing reservoir boat ramps that are used to refill tanker trucks, resulting in a less than significant effect on fire suppression efforts. The installation of additional monitored detection system wildfire detection sites would have a long-term, significant, beneficial effect on the early detection of new fires in the region," (EIS, page 3-455.)

However, the Proposed Project would have broad environmental beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and

increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to a substantial decrease in fire protection involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires.

Conclusions

As indicated above, the Proposed Project would result in significant and unavoidable long-term impacts due to loss in wildfire fighting capabilities due to the removal of the reservoirs. The Proposed Project will also result in significant environmental benefits.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the short-term exceedance of NOx thresholds to be acceptable.

Transportation and Traffic

Overview

Construction activities associated with the Proposed Project could have a significant effect on safety or performance of the circulation system, including transit, roadways, bicycle lanes or pedestrian paths. The existing conditions of the roadways and other infrastructure are not adequate for all of the construction activities included in the Proposed Project. The existing roadways in the Area of Analysis are generally narrow, rural roads that have been used primarily for a small amount of residential use and the existing seasonal recreational use demand associated with the reservoirs. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The EIR and EIS examine the potential effect of the Proposed Project on transportation and traffic during construction and operation. As discussed in detail in Section 3.22, the State Water Board concludes that Potential Impact 3.22-6 will not be significant. CEQA findings and statements of overriding considerations for the remaining potentially significant effect to transportation and traffic is set out below.

CEQA Findings

Potential Impact 3.22-1, EIS Section 3.8.3.4, pages 3-457 to 3-458[21]

The State Water Board finds that the Proposed Project could result in a significant impact associated with an increase in traffic in excess of the capacity or design of the road improvements or impairment of the safety or performance of the circulation system, including transit, roadways, bicycle lanes or pedestrian paths, including congestion. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that short-term impacts to local roads would be primarily limited to the pre-construction period, the dam removal period (May through September of the drawdown year; Table 2.7-1) and one to five years after dam removal during restoration and monitoring activities. The pre-construction and dam removal period would include the import and export of materials and equipment, as well as the construction workforce associated with all the elements of the Proposed Project. Dam removal itself would result in the highest projected construction intensity under the Proposed Project, and thus the greatest workforce and number of associated vehicle trips. Volume I, Table 3.22-5 presents the projected size of the dam removal workforce that would be commuting daily to the site, and the duration of the activity for each of the dams (EIR, page 3-1069). Additionally, the EIS discusses the average and peak number of workers at each damn removal area (EIS, Page 3-456).

Because recreational facilities at the reservoirs would be closed during the construction period, this analysis assumes that traffic associated with recreational use of the reservoirs would cease during the construction period. When the additional traffic flow from the short-term concurrent activities associated with dam removal is compared to the current traffic flow for recreational use of the reservoirs, the workforce traffic is similar to the current recreational use traffic (EIR, page 3-1070). Additionally, since adoption of the EIR, the Proposed Project has been changed to include temporary on-site housing for construction workers, which should further reduce traffic. (EIS, page 3-456.)

Roadways, bridges, and culverts that may require improvements over their current conditions in order to withstand construction-related traffic under the Proposed Project are listed in Volume I Section 3.22.2.3 Road Conditions. The California Traffic Management Plan identifies road improvements for specific segments, including

[21] The EIS analyzes traffic-related impacts together, while the EIR addresses them in multiple impacts. These findings maintain the EIS separation of the traffic into separate impacts, but incorporate the EIS as appropriate.

surfacing, replacing culverts, and adding temporary strengthening to existing bridges to support increased truck traffic and weights. (EIS, page 4-456.) Proposed Project would include improvement of these facilities to a level that would enable them to accommodate traffic associated with the Proposed Project without being degraded below baseline conditions. In addition, the discussion of impacts and mitigation measures set forth in the EIR and EIS and in the KRRC's Management Plans, including Mitigation Measures WQ-1, TER-1, TER-2, TER-3, TCR-1, TCR-2, TCR-3, TCR-4, and HZ-1, would assist those decisionmakers in determining how the impacts of road improvements can be mitigated (EIR, pages 3-1071 – 3-1072). The EIR also explains that the Proposed Project would not conflict with the measures set forth in the Regional Transportation Plan or with the goal and objective of the Land Use and Circulation element of the County's general plan does not contain measures or programs that would conflict with the Proposed Project in a manner that would adversely affect the environment (EIR, page 3-1072).

Overall, the additional traffic related to pre-construction activities, dam removal, waste transportation, restoration and monitoring activities, and planned improvements to existing roads, bridges and culverts under the Proposed Project would replace, and be similar to existing recreational use levels and thus would not have substantial, short-term impacts on the level of service (LOS) in the Area of Analysis. However, the proposed activities could result in impairing the safety or performance of the circulation system for all users, resulting in a potentially substantial risk of harm to the public (EIR, page 3-1072). Additionally, the road construction on bridge and culvert sites on Copco Road would require closures and detours, with a temporary adverse effect on traffic, and traffic on gravel roads may increase significantly. (EIS, page 3-457.)

As part of mitigation, the Proposed Project includes a California Traffic Management Plan. The major objectives of the California Traffic Management Plan are to maintain efficient and safe movement of vehicles through the construction zone covered by activities in the Definite Plan (Volume II Appendix B) and to provide public awareness of potential impacts to traffic on both haul routes and access roads to the four dam complexes.

Mitigation Measure TR-1 – Transportation and Traffic

A. The KRRC and/or its contractor(s) shall develop a final Traffic Management Plan that provides:

    1. Implementation details consistent with all applicable regulatory requirements including the latest version of the Caltrans California Manual on Uniform Traffic Control Devices (MUTCD, Caltrans 2018b), Caltrans Traffic Management Plan (TMP) Guidelines, Oregon Department of Transportation (ODOT) Oregon Supplement to the MUTCD, Federal Highway Administration MUTCD, ODOT Traffic Control Plans Design Manual, and ODOT TMP Project Level Guidance Manual. KRRC will coordinate with the noted

agencies (Caltrans, ODOT, Siskiyou and Klamath County Public Works and Sheriff's Departments, California Highway Patrol and Oregon State Police, CALFIRE, Oregon Department of Forestry [ODF] Fire Division, and other emergency response agencies) as part of the detailed design phase and prior to start of construction. Potential conflicts with bicycle and pedestrian use, as well as transit and school bus service, need to be addressed in the Traffic Management Plan. The final version of the Traffic Management Plan, after coordination with the above referenced agencies, shall be received by the State Water Board prior to the start of construction.

2. Each road, bridge, and culvert improvement project included in the Proposed Project, or any other road, bridge, or culvert improvement project that is identified as necessary for the Proposed Project, shall be constructed consistent with the latest version of the Caltrans Highway Design Manual (Caltrans 2018c), Caltrans Standard Plans, Caltrans Standard Specifications, or ODOT Highway Design Manual, ODOT, Standard Drawings and Standard Details, and ODOT Standard Specifications, or equivalent, and shall not conflict with any applicable plan, ordinance, or policy regarding performance of the transportation system, traffic safety and/or congestion management within the Area of Analysis. Construction shall not begin until all final designs for road, bridge, and culvert improvement projects included in the Proposed Project have been received and approved, as necessary, by the county and other responsible agencies.

3. The KRRC shall be responsible for repairing and/or rehabilitating any Siskiyou County roadways within the traffic and transportation Area of Analysis that are damaged or otherwise adversely impacted by Proposed Project activities, such that they are in a condition equal to or better than they were before dam removal activities.

B. The KRRC and/or its construction contractor(s) shall develop an Emergency Response Plan with details and procedures to be put in place to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies through coordination with emergency response agencies, as described in Appendix B: *Definite Plan − Appendix O4*.

The EIS concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level.

Since adoption of the EIR in 2020, the KRRC has submitted a series of plans that update the proposal analyzed in the EIR as to potential traffic impacts related to the Proposed Project and meeting relevant standards. The California Traffic Management Plan, submitted to the FERC on December 14, 2021, describes the measures that the KRRC will implement to maintain efficient and safe movement of traffic through the Project work area. The KRRC has also negotiated a memorandum of understanding (MOU) with the county of Siskiyou to address the County's regulatory interests with respect to traffic control, roadway alignment, and maintenance.

Additionally, the KRRC also submitted a Health and Safety Plan to the FERC on December 14, 2021. The Health and Safety Plan includes a Traffic Control Plan which is composed of two sub plans: a Traffic Management Plan (TMP), and a Traffic Incident Management Plan (TIMP). KRRC has also finalized an Emergency Response Plan, as part of the Construction Management Plan filed with FERC on December 14, 2021.

The EIS indicates increases in construction traffic at on-site gravel roads at each dam would have a temporary, significant, adverse effect, partially mitigated by on-site signage and construction traffic management. Additionally, the EIS also finds road construction at bridge and culvert sites would have a temporary, adverse effect on traffic. (pages 3-457 – 3-458).

Potential Impact 3.22-2

The State Water Board finds that the Proposed Project could conflict with an applicable congestion management program for designated roads or highways that would result in increased risk of harm to the public, resulting in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

As the EIR indicates, the Proposed Project would not conflict with the measures set forth in the Regional Transportation Plan or with the goal and objective of the Land Use and Circulation element of Siskiyou County's general plan in a manner that would affect the environment. (page 3-1068.) The number of trips anticipated under the Proposed Project are fewer than those identified as causing a change in Level of Service as determined under the 2016 Siskiyou County Transportation Plan. (See Table 3.22-2 and pages 3-1070 to 3-1071.) The traffic and congestion mitigation measures set forth in the California Traffic Management Plan, the Emergency Response Plan, and the traffic-related elements of the Health and Safety Plan would also apply to this impact. The State Water Board concludes that implementation of the final Traffic Management Plan, Emergency Response Plan, and Health and Safety Plan, would reduce impacts to a less than significant level.

Potential Impact 3.22-3

The State Water Board finds that the Proposed Project could result in a substantial increase in hazards due to a design feature or incompatible uses associated with construction-related traffic that would result in an increased risk of harm to the public, which would result in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains the existing conditions of the roadways and other infrastructure are not adequate for all of the construction activities included in the Proposed Project, as described in Volume II Appendix B: Definite Plan − Appendix K, and as updated in the California Traffic Management Plan, which "identifies road improvements for specific segments, including widening road segments to allow for safer passing of oncoming vehicles, improved surfacing, replacing culverts, and adding temporary strengthening to existing bridges to support increased truck traffic and weights." (EIS, page 3-456.) The California Traffic Management Plan was based on a 2021 review of existing road conditions, and identification of changes to address concerns regarding additional traffic, heavy truck weights, and user safety. (EIS, page 3-456.)

Implementation of Mitigation Measure TR-1, listed above, would require additional components beyond those listed as part of the Proposed Project (i.e., the Traffic Management Plan and Emergency Response Plan which were submitted to the FERC on December 14, 2021) and these components would be necessary to reduce potential traffic and transportation hazards due to a design feature or incompatible uses to less than significant. The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process would reduce impacts to a less than significant level.

Potential Impact 3.22-4, EIS Section 3.8.3.4, pages 3-457 to 3-458[22]

The State Water Board finds that the Proposed Project could result in inadequate emergency access that would result in an increased risk of harm to the public, resulting in a significant impact. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

[22] The EIS analyzes traffic-related impacts together, while the EIR addresses them in multiple impacts. These findings maintain the EIS separation of the traffic into separate impacts, but incorporate the EIS as appropriate.

The EIR indicates the peak of construction-related traffic would generally be for a two-year period (Table 2.7-1). Changes to traffic types and patterns could increase the potential for traffic-related conflicts due to the Proposed Project (e.g., construction-related traffic) as well as other users of the road, whether they be residents, or motorized and non-motorized transportation users. (However, as described in Volume I Section 3.22.5, it is assumed that recreation-related trips would effectively be replaced by construction worker trips during the construction period, which helps to limit traffic increases resulting from the Proposed Project.) Changes in the level of traffic and types of traffic-related conflicts may affect both the response time and the frequency of calls requiring emergency response (EIR, page 3-1075).

The Proposed Project includes an Emergency Response Plan that addresses transportation-related emergency concerns (e.g., emergency access and response), while a final Emergency Response Plan, with additional details, would be required from the construction contractor (Volume II Appendix B: Definite Plan − Appendix O4). Emergency response is also discussed in Volume I Section 3.17 Public Services and Section 3.21 Hazards and Hazardous Materials, which address impacts related to emergency response providers as well as the risk of increased hazards such as wildfires and adequate access for abating wildland fires (EIR, page 3-1075).

Implementation of Mitigation Measure TR-1, described above, would require additional details and procedures to be put in place to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies through coordination with emergency response agencies, as described in Volume II Appendix B: Definite Plan − Appendix O4, which would render potential traffic and transportation impacts of the Proposed Project to levels similar to baseline conditions. Because wildfires can spread at a rapid speed and involve high risks, any amount of additional response time compared with existing conditions could result in a substantial increased risk of loss, injury, or death involving wildland fires and this would be a significant impact. However, the State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level.

Since adoption of the EIR the KRRC has updated the draft plan, and submitted a California Traffic Management Plan to the FERC on December 14, 2021. The Traffic Management Plan describes the measures that the KRRC will implement to maintain efficient and safe movement of traffic through the Project work area. The KRRC has also negotiated a memorandum of understanding (MOU) with the county of Siskiyou which addresses the County’s regulatory interests with respect to traffic control, roadway alignment, and maintenance.

Additionally, the KRRC also submitted a Health and Safety Plan to the FERC on December 14, 2021. The Health and Safety Plan includes a Traffic Control Plan which is composed of two sub plans: a Traffic Management Plan (TMP), and a Traffic Incident Management Plan (TIMP).

The EIS indicates that the impact will be significant in the short term, due to an increase in traffic by construction personnel, hauling trucks and other heavy machinery during dam removal, which will have an adverse effect on congestion, road safety, and emergency response time within the Project area (pages 3-457 – 3-458).

Potential Impact 3.22-5

The State Water Board finds that the Proposed Project construction-related activities would conflict with public transit, bicycle, or pedestrian facilities, or decrease of the performance or safety of such facilities resulting in an increased risk of harm to the public, resulting in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that short-term impacts to public transit, bicycle, or pedestrian facilities would result in an increased risk of harm to the public if construction-related activities substantially decrease the safety of such uses utilizing the roadways within the Area of Analysis. As described in Volume I Section 3.22.2.5 Public Transit, there is minimal public transit, including bus service, rail service, or airports in the Area of Analysis. Construction-related traffic conflicts could occur where there is an occasional bicyclist or pedestrian using the roadways or when public transportation, including school bus traffic, is using the same roads as construction-related traffic. There is no information available on existing pedestrian or bicycle facilities. A review of Google Earth and Street View (2018) indicated the general absence of sidewalks and bike paths, and no information is available on the amount of bicycle or pedestrian use. Bicyclist or pedestrian use would be subject to a decrease in the performance and safety of the roadways utilized by the Proposed Project during construction activities, resulting in a potentially substantial increased risk of harm to the public, which would be a significant impact (EIR, page 3-1076).

The Proposed Project includes management strategies in the draft Traffic Management Plan (Mitigation Measure TR-1) that would identify areas where pedestrians and cyclists could potentially share roads with construction vehicles. KRRC's contractor will install appropriate signage to notify both construction vehicle drivers and non-motorized users of each other's potential presence on the roads. If an unacceptable level of risk to non-motorized users is deemed to persist, KRRC's contractor will arrange appropriate detours to allow continued movement for such users (Volume II Appendix B: Definite Plan – Appendix O2).

The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process would reduce impacts to a less than significant level.

Statement of Overriding Considerations

*Potential Impact 3.22-1*As indicated above, the Proposed Project could result in an increase in traffic in excess of the capacity or design of the road improvements or impairment of the safety or performance of the circulation system. This would result in a short term significant impact to transportation and traffic. The KRRC has developed a California Traffic Management Plan which describes the measures that the KRRC will implement to maintain efficient and safe movement of traffic through the Project work area. Implementation of the California Traffic Management Plan will reduce impacts associated with traffic and transportation, but is not enough to reduce the impact to less than significant. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project would result in traffic related impacts associated with an increased number of vehicles traveling through the Project area.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to transportation and traffic.

Potential Impact 3.22-4

As indicated above, the Proposed Project could result in inadequate emergency access that would result in an increased risk of harm to the public. This would result in a short term significant impact to transportation and traffic. The KRRC has developed a California Traffic Management Plan which describes the measures that the KRRC will implement to maintain efficient and safe movement of traffic through the Project work area. The KRRC has also developed a Fire Management Plan that describes the measures that will be implemented to reduce the risk from wildifres such as installation of an early detection system, installation of dry hydrants, and equipment that will be purchased such as a chipper and truck which will be used to increase the defensible space around structures. Implementation of the California Traffic Management Plan and the Fire Management Plan will reduce impacts associated with traffic and transportation, but is not enough to reduce the impact to less than significant. This

would result in a short term significant impact to transportation and traffic. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project would result in traffic related impacts associated with inadequate emergency access.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to transportation and traffic.

Conclusions

As indicated above, the Project would result in significant and unavoidable impacts associated with increased traffic congestion and emergency access. The Project would impact local roads up to five years following dam removal due to an increase in construction related traffic such as the import and export of materials and equipment, and an increase in traffic due to the construction workforce who will be active in the Project area. Changes to traffic types and patterns could increase the potential for traffic-related conflicts due to the Proposed Project. Changes in the level of traffic and types of traffic-related conflicts may affect both the response time and the frequency of calls requiring emergency response.

Noise

Overview

Components of the Proposed Project could have a significant effect noise and vibration during construction activities due to the proximity of sensitive receptors. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The Final EIR examines the potential effect of the Proposed Project associated with noise and vibration generated during construction and operation, while the EIS focuses on construction-related activities, particularly during the six months of dam removal. As discussed in detail in Volume I Section 3.23, the State Water Board concludes that Potential Impacts 3.23-3, 3.23-7, 3.23-8, 3.23-9, and 3.23-10 will not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect of noise and vibration associated with the Proposed Project is set out below.

CEQA Findings

Potential Impact 3.23-1, EIS Section 3.15.3.2 (pages 3-575 to 3-577)[23]

The State Water Board finds that the Proposed Project would result in a short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR and EIS explain that for several specific types of construction equipment (specifically dozers, jackhammers, and tractors), the maximum allowable noise level identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978) of 81 dBA at 50 feet (converted from maximum allowable noise levels from construction equipment at 100 feet) are lower than the typical noise levels produced by those equipment types according to the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006). This is summarized in Volume I Table 3.23-5, with noise levels ranging from 82 dBA to 89 dBA at 50 feet for these types of construction equipment. Given the maximum allowable noise levels identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978), any use of dozers, jackhammers, and/or tractors during the Proposed Project would constitute an exceedance of County maximum allowable noise levels and this would be a significant impact (EIR, page 3-1093 and EIS Page 3-576).

The Proposed Project includes a Noise and Vibration Control Plan (NVCP) (Volume II Appendix B: Definite Plan – Appendix O5) that would minimize short-term outdoor noise impacts, and which specifies that a Final NVCP, with additional details, would be required of the construction contractor. The proposed NVCP requires preparation and implementation of the Final NVCP and would be necessary to reduce potential noise impacts to the degree feasible. However the Final NVCP would not cause equipment noise levels from dozers, jackhammers, and tractors to comply with the Siskiyou County maximum allowable noise levels for these specific equipment types since the maximum allowable noise levels are lower than the typical noise levels produced by those equipment types according to the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006). Therefore, this impact would be significant and unavoidable (EIR, page 3-1094, EIS, 3-577).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

[23] This Findings document uses the organization of impacts from the EIR, and relies on the EIS analysis and findings, which are differently organized, as appropriate.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

Under the No Project and No Action Alternatives, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, these alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-2, EIS Section 3.15.3.2 (pages 3-575 to 3-577) [24]

The State Water Board finds that the Proposed Project would result in short-term increases in daytime and nighttime noise levels affecting residents near Copco No.1 Dam due to construction activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

Noise associated with construction of the Proposed Project was modeled (Volume II Appendix T) to determine impacts. The EIR explains that the noise model used the maximum allowable noise level in the Siskiyou County General Plan Noise Element (1978) for equipment (specifically dozers, jackhammers, and tractors) whose maximum sound level (Lmax) in the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006) exceeds the Siskiyou County regulation. This would cause the noise model (Appendix T) to slightly underestimate noise levels during construction. However, for the other 17 equipment types listed in the noise model, appropriate equipment noise levels consistent with FHWA 2006 were used (EIR, page 3-1094). The noise model (Appendix T) also does not account for blasting during Shift 2 at Copco No. 1 Dam or during any work shift at Iron Gate Dam and thus underestimates the potential noise impacts.

[24] This Findings document uses the organization of impacts from the EIR, and relies on the EIS analysis and findings, which are differently organized, as appropriate.

The EIS calculated temporary dBA from blasting to potentially reach 94 dBA at 50 feet from the source, but because of the limited duration of the sound this does not significantly affect the overall construction Leq. (EIS, page 3-576.)

Volume I Table 3.23-6 lists the predicted average one-hour Leq at Copco No. 1 Dam and Iron Gate Dam and at the receptors, the existing Leq without the project, and the increase in noise level at the receptors that would occur as a result of the Proposed Project. The threshold of significance for this impact for both the EIS and EIR is "a greater than 10 dBA increase in the daytime or nighttime outdoor one-hour Leq at the receptor from onsite construction operations." The increase in outdoor noise levels would have a short-term significant noise impact on the residential area near Copco No. 1 Dam during both day and night. (EIS, page 3-576.)

As indicated above, the Final NVCP would not be enough to reduce short-term construction-related noise impacts to less than significant levels at sensitive receptors. Therefore, noise impacts would remain significant and unavoidable for outdoor receptors during Copco No. 1 Dam deconstruction. (EIR, page 3-1096; EIS, page 3-576.)

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-4, EIS Section 3.15.3.2 (pages 3-575 to 3-577) [25]

The State Water Board finds that the Proposed Project would result in short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the predicted Leq from the Iron Gate facilities removal is approximately 91 dBA at 50 feet during both shifts (6 a.m. to 4 p.m. and 6 p.m. to 4 a.m.). The combination of existing noise and attenuation due to distance, atmospheric effects, ground absorption, and terrain effects would result in a Leq of approximately 46 dBA at the nearest receptor (Iron Gate Hatchery and associated facilities) (Volume I Table 3.23-6) (Volume II Appendix T). The estimated noise level at the receptor exceeds the significance criterion for nighttime noise during all proposed night work (7 p.m. to 4 a.m. and 6 a.m. to 7 a.m.). The EIS also finds that the noise levels will exceed significance criterion during the day. (EIS, page 3-576.) Therefore, construction noise would cause a short-term significant noise impact on the residential area near Iron Gate Dam. Implementation of the proposed NVCP (as described in Potential Impact 3.23-1) would reduce this noise impact; however, it would not reduce nighttime outdoor noise impacts to less than significant levels at sensitive receptors. Thus, noise impacts would remain significant and unavoidable for outdoor receptors during Iron Gate Dam deconstruction (EIR, page 3-1097; EIS, page 3-576.).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

[25] This Findings document uses the organization of impacts from the EIR, and relies on the EIS analysis and findings, which are differently organized, as appropriate.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-5

The State Water Board finds that the Proposed Project would result in short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that equipment, including planes, barges, trucks, and helicopters, would be used for reservoir restoration at the same time as and subsequent to dam deconstruction. This reservoir restoration activity would add to the noise levels generated by dam deconstruction activities in and around the dam sites described above. Hydroseeding methods include by barge along the reservoir bank, by helicopter along steep slopes, by airplane along uneven large areas, and by trailer-mounted blower for areas easily accessible by truck. Equipment noise from embankment restoration would cause a short-term significant noise impact on the residential areas near the Copco No. 1 and Iron Gate reservoirs and contribute to the noise levels generated by dam deconstruction in and around the dam sites. The Proposed Project includes development of a NVCP (Volume II Appendix B: Definite Plan – Appendix O5) to minimize noise impacts from construction activities. Implementation of the Final NVCP would reduce short-term outdoor noise impacts, but given that they would add to already significant noise levels generated during construction activities (Volume I Potential Impacts 3.23-2 and 3.23-4), noise impacts would remain significant and unavoidable for outdoor receptors during the reservoir restoration activities (EIR, page 3-1098).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities

would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-6, EIS page lxviii

The State Water Board finds that the Proposed Project would result in a short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2, and Iron Gate dams due to blasting activities during removal of the dams, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that blasting at each dam is proposed to occur infrequently, would be restricted to the time between 8 a.m. and 6 p.m., and would be dependent on scheduling. The predicted vibration levels at sensitive receptors are summarized in Volume I Table 3.23-7. Blasting during the first shift at Copco No. 1 Dam is anticipated to result in PPV and Lv at the nearest receptor of 0.065 in/sec and 84 VdB, respectively. For reference, vibration levels without blasting are 0.002 in/sec and 53 VdB (Table 3.23-7) (Appendix T). Blasting during the first shift at Copco No. 1 Dam would exceed the significance criteria for Lv (Lv greater than 72 VdB at the receptor). The vibration model (Volume II Appendix T) did not account for the proposed blasting at either of the other dams. Blasting at Copco No. 2 and Iron Gate is proposed to occur infrequently between 8 a.m. and 6 p.m. Therefore, it is conservatively assumed that vibration levels at Copco No. 2 and Iron Gate dams during Shift 1 would also exceed the threshold of significance (EIR, page 3-1098).

The EIR concludes that construction activities (including blasting) would result in significant human annoyance levels for daytime vibration impacts at receptors near each of the three dams. The Proposed Project includes a Noise and Vibration Control Plan (NVCP) (Appendix B: Definite Plan – Appendix O5) that would minimize short-term outdoor noise impacts, and which specifies that a Final NVCP, with additional details, would be required of the construction contractor. The proposed NVCP requires preparation and implementation of the Final NVCP and would be necessary to reduce potential noise impacts to the degree feasible. The Final NVCP would minimize short-

term outdoor noise impacts during blasting activities, but would not reduce impacts to less than significant levels at sensitive receptors. Daytime vibration impacts to humans would remain significant and unavoidable for outdoor receptors during the blasting activities (EIR, page 3-1099; EIS, page lxviii).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise and vibration levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise or vibration. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise and vibration levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.23-1

Given the maximum allowable noise levels identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978), any use of dozers, jackhammers, and/or tractors during the Proposed Project would constitute an exceedance of County maximum allowable noise levels (EIS Page 3-577). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment.

The Proposed Project will have significant beneficial environmental effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment.

Potential Impact 3.23-2

Construction work occurring during both daytime and nighttime shifts would generate noise levels that exceed the significance criteria of "a greater than 10 dBA increase in the daytime or nighttime outdoor one-hour Leq at the receptor from onsite construction operations" at all times because of the high source noise level (EIS Page 3-576). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increases in daytime and nighttime noise levels affecting residents near Copco No.1 Dam due to construction activities.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increases in daytime and nighttime noise levels affecting residents near Copco No. 1 Dam due to construction activities.

Potential Impact 3.23-4

The predicted Leq from the Iron Gate facilities removal is approximately 46 dBA at the nearest receptor (Iron Gate Hatchery and associated facilities) during both shifts (6 a.m. to 4 p.m. and 6 p.m. to 4 a.m.) (EIS Page 3-576). The estimated noise level at the receptor exceeds the significance criterion for nighttime noise during all proposed night work (7 p.m. to 4 a.m. and 6 a.m. to 7 a.m.) (EIS Page 3-576). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities

As indicated above, the Proposed Project will have beneficial environmental effects including: significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities.

Potential Impact 3.23-5

Equipment noise from embankment restoration would cause a short-term significant noise impact on the residential areas near the Copco No. 1 and Iron Gate reservoirs and contribute to the noise levels generated by dam deconstruction in and around the dam sites. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities.

Potential Impact 3.23-6

Blasting during the first shift at Copco No. 1 Dam would exceed the significance criteria for Lv (Lv greater than 72 VdB at the receptor). It is conservatively assumed that vibration levels at Copco No. 2 and Iron Gate dams during Shift 1 would also exceed the threshold of significance. Construction activities (including blasting) would result in significant human annoyance levels for daytime vibration impacts at receptors near each of the three dams. The EIS states that where blasting is required for dam removal, there would be momentary instances where noise levels may reach 94 dBA at 50 feet from the source (EIS Page 3-576) As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2, and Iron Gate dams due to blasting activities during removal of the dams.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable associated with short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2, and Iron Gate dams due to blasting activities during removal of the dams.

Conclusions

The above stated reasons summarize the benefits of the proposed Project. Along with the objectives stated at the beginning of this document, the State Water Board finds that any one of the environmental, technological, policy, and economic benefits of the proposed Project set forth above is sufficient by itself to warrant approval of the proposed Project. These overriding considerations justify adoption of the proposed Project and certification of the completed Final EIR. This determination is based on the findings herein and the evidence in the record.

Cumulative Effects

Overview

The EIR uses a list approach (Volume I Table 3.24-1) to analyze potential cumulative effects for each resource area, considering specific impacts of the Proposed Project in combination with potential impacts of other projects. The list for the Proposed Project cumulative effects analysis includes the following planned, approved, or reasonably foreseeable project types that would result in related or cumulative impacts when considered in combination with the Proposed Project: riverine restoration projects; terrestrial resource management, conservation and restoration projects; water flow and water quality resource management projects; wildfire; forest and wildfire management projects; cannabis cultivation projects; other agricultural and rural residential projects; mining and mining withdrawal projects; infrastructure and energy projects; other rezoning and development projects; and recreation projects. The EIS focuses its analysis on activities where there is new relevant information since the prior cumulative impact analysis and where there is the greatest potential contribution to cumulative effects. (EIS, page 3-592.)

The Final EIR examines the contribution of the Proposed Project on cumulative impacts. As discussed in detail in Volume I Section 3.24, the State Water Board concludes that Potential Impacts 3.24-1, 3.24-3, 3.24-5 through 3.24-32, 3.24-34 through 3.24-54, 3.24-56 through 3.24-63, and 3.24-66 will either not be significant or will be beneficial.

Beneficial effects of the Proposed Project include long-term cumulative change in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary. In addition, the combined effect of the Proposed Project and the other restoration, flow enhancement, and water quality improvement projects would be beneficial for water quality, especially for water temperature and chlorophyll-a and algal toxins. The restoration, flow enhancement, and water quality improvement projects would increase the amount of cold water flowing in the river improving water temperature conditions for salmonids, while the Proposed Project would improve water temperature by returning more natural seasonal and daily variations. In combination with restoration, flow enhancement, and water quality improvement projects, the Proposed Project would help to offset the effects of climate change on late summer/fall water temperatures. Increases in river flows from restoration, flow enhancement, and water quality improvement projects would also be beneficial for water quality by diluting chlorophyll-a and algal toxins concentrations, while the Proposed Project would decrease high seasonal chlorophyll-a concentrations and periodically high algal toxin concentrations

CEQA findings and statements of overriding considerations for the remaining cumulative impacts is set out below.

CEQA Findings

Water Quality

Potential Impact 3.24-2 and EIS Section 3.16.2, page 3-602

The State Water Board finds that the Proposed Project's contributions to short-term increases in suspended sediments would be cumulatively considerable under the Proposed Project, in combination with the Klamath River Flow Requirements, ground disturbing activities including housing construction and transportation improvement, and land uses that can contribute to erosion such as timber harvesting, mining, agriculture, grazing. It is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIS's potential cumulative impact analysis examines whether the Proposed Project in combination with the 2017 flow requirements (i.e., 2013 BiOp Flows plus the 2017 court-ordered flushing and emergency dilution flows – now superseded by BiOp and court-ordered flows that also have a flushing element) would potentially have a short-term significant cumulative effect on suspended sediments, with the incremental contribution of the Proposed Project being cumulatively considerable. The EIS requires the KRRC to coordinate with the United States Bureau of Reclamation, United States National Marine Fisheries, and Unites States Fish and Wildlife Service regarding any potential changes to operation of the Klamath Irrigation Project that could reduce the discharge peaks into the hydroelectric reach while the reservoirs are being drawn down. (EIS, page 4-33.) This could help avoid refill of the Project reservoirs during high inflow

events that could occur during drawdown, potentially reducing the duration of high SSCs downstream.

The EIR explains that there are one to two months when flushing flows may increase SSCs outside of the Proposed Project reservoir drawdown period as surface flushing flows potentially would occur until April 30 and deep flushing flows potentially would occur until May 31. Thus, there would be the potential for a cumulative short-term increase in SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combined effect of the Proposed Project and the 2017 flow requirements in water years when the Proposed Project reservoir drawdown flows do not meet the surface and/or deep flushing flow requirements. (EIR, Vol. III, pages AT1-1026 to AT1-1028)

Potential Impact 3.24-4

The State Water Board finds that the Proposed Project's contribution to short-term water quality effects of the Proposed Project would be cumulatively considerable in combination with wildfires and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3)).

The EIR explains that wildfires could potentially impact water quality by increasing SSCs due to increased erosion in burn areas. A late-season (e.g., November) wildfire during dam removal year 1 or 2 that burns the landscape near or within the water quality Area of Analysis and is followed by heavy rainstorms would potentially result in a short-term cumulative increase in the SSCs. Erosion from heavy rains on a burned area from a late-season wildfire could increase SSCs during the initial drawdown of Copco No. 1 Reservoir in dam removal year 1 or during the late-fall/early winter period in dam removal year 2 and result in SSCs exceeding the significance criteria (i.e., 100 mg/L for a continuous two-week period) for a longer duration than under the Proposed Project alone. However, the short-term cumulative increase in SSCs from a late-season wildfire followed by heavy rains would not be likely to increase the magnitude of SSCs outside the range modeled for the Proposed Project. As noted in the EIS, the risk of both wildfires and heavy precipitation events are heightened by climate change. (EIS, page 3-602.)

Given that the Proposed Project exceeds significance criteria for SSCs, and because of the potential for an extended duration of elevated SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combination of the Proposed Project and wildfires, this short-term impact is assessed as cumulatively considerable.

EIS, Section 3.16.4 Water Quality, page 3-604

The State Water Board Finds that the Proposed Project's contribution to short-term reductions in DO in the hydroelectric reach and downstream to approximately Seiad Valley would be cumulatively considerable. Changes or mitigation measures have been

required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3).)

As described above in *Potential Impact 3.24-2 and EIS Section 3.16.2, page 3-602,* there would be a cumulative short-term significant impact raising suspended sediment levels in the Klamath River due to the Proposed Project. As explained in *Potential Impact 3.2-9*, the increased suspended sediments are anticipated to increase biological oxygen demand, which will impair the dissolved oxygen levels between the hydroelectric reach and Seiad Valley.

As discussed in *Potential Impact 3.2-9*, there is no feasible mitigation for the discharge of sediments during drawdown, which is the largest contribution to biological oxygen demand. The Proposed Project does, however, incorporate erosion control mitigation activities as identified in the Reservoir Area Management Plan, California Reservoir Drawdown and Diversion Plan, California Slope Stability Monitoring Plan, and California Sediment Deposit Remediation Plan.

Over the long term, significant beneficial impacts to DO from conversion of reservoir areas to a free-flowing river are anticipated.

Aquatic Resources

EIS Section 3.16.5, page 3-606

The State Water Board finds that the Proposed Project's incremental contribution to cumulative effects associated with suspended sediment would be significant in the short term, in combination with ongoing land uses and poor water quality. Changes or mitigation measures have been required in, or incorporated into, the project to substantially lessen the impact. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(1).) However, these measures are insufficient to fully mitigate the impact, and it is not feasible to mitigate this impact to a less than significant level or to avoid this impact. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3).)

Increases in suspended sediments are anticipated to short-term significant effects on coho salmon, Chinook salmon, steelhead, Pacific lamprey, freshwater mussels, and benthic macroinvertebrates. While no specific non-project activities have been identified that would affect aquatic habitat during reservoir drawdown, ongoing activities such as agriculture, water diversions and mining, along with poor water quality could all contribute to the degradation of habitat for aquatic species during this period. (EIS, page 3-606.)

The Reservoir Drawdown and Diversion Plan includes actions to limit the duration of sediment exposure. Additionally, as described in more detail in section 2.1.2.9 of the EIS, the Aquatic Resources Management Plan includes actions to limit the short-term

suspended sediment impacts to aquatic resources. However, mitigation to a less than cumulatively significant level is not feasible. (EIS, page 3-606.)

EIS Section 3.16.5, page 3-607

The State Water Board finds that the Proposed Project would, in the short-term, result in a cumulatively considerable contribution to reduced adult coho and Chinook salmon returning to the Klamath River, in combination with fishing, drought conditions, poor ocean conditions and warm water in the Klamath River. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3).)

Under the Proposed Project, Iron Gate Hatchery would close. While the Proposed Project would re-open, expand and operate Fall Creek Hatchery for eight years, the levels of hatchery production would be reduced as compared to current conditions. While in the longer-term, the loss of hatchery production is anticipated to be offset through anticipated benefits of new habitat, improved water quality, restored sediment transport processes, reduced disease, improved population structure and viability, and improved resilience to climate-change, the timeframe for these changes is indefinite. (EIS, pages 3-607 to 3-608.) Ongoing and potential conditions regarding fishing, drought, poor ocean conditions and warm water in the Klamath River additionally contribute to poor adult returns.

Since its evaluation in the EIR, the Proposed Project has been changed to entirely close the Iron Gate Hatchery facility, and to increase production at the Fall Creek Hatchery. (EIS, Exhibit D – Hatcheries Management and Operations Plan). This change was made after consultation with the California State Water Resources Control Board, the North Coast Regional Water Quality Control Board, the California Department of Fish and Wildlife, the National Marine Fisheries Service, and the Federal Energy Regulatory Commission and in light of the determination that the cost of changes necessary to keep Iron Gate Hatchery running without its existing water supply, including the limits of supply available, the impacts of diversion on Bogus Creek, and the potential unreliability of supply, made continued operation of the facility for the short-term infeasible. (See CDFW Memorandum, September 29, 2022.) In light of this additional analysis, the prior proposal does not present a viable alternative.

Terrestrial Resources

The State Water Board finds that the Proposed Project's contribution in the short term to terrestrial resources impacts, in combination with ongoing effects of other activities and land uses that can disturb terrestrial resources, including agriculture, mining, road improvements, and new housing, together with past human development, would be cumulatively considerable. However, modifications or changes to the Proposed Project have been incorporated to reduce the contribution to less than significant. (EIS, Sections 3.5.4.1 and 3.5.4.2).

The Proposed Project includes diversions, reservoir drawdown and construction activities that have the potential to affect terrestrial resources, including special status species, and common wildlife species, as analyzed in the EIS, Section 3.5. These types of impacts can contribute to the cumulative impacts that current and ongoing activities cause on terrestrial resources, including agricultural and mining activities, and construction activities like planned housing developments and road improvement. However, the Proposed Project includes the Terrestrial Wildlife Management Plan and the Reservoir Area Management Plan, that will reduce short-term adverse effects on special status and common wildlife species. (EIS, page 3-610.) Additional, more specific detail on the reduction of cumulative impacts on wetlands and riparian areas; invasive plans and vegetation; special status plans; wildlife habitat; and special status wildlife species (including bats and eagles) are found in EIS, Sections 3.16.6.1 through 3.16.6.5, respectively.

Threatened and Endangered Species

EIS Section 3.16.7.1

The State Water Board finds that the Proposed Project's elevation of suspended sediments results in a cumulatively considerable contribution to short-term impacts on the eulachon, and that this impact cannot be avoided or mitigated.

As noted in the EIS at page 3-614, "The presence of the four hydroelectric dams, timber harvesting, and forest management activities like road construction have affected and continue to affect water flow, water quality, and overall riverine habitat suitability for eulachon by increasing sediment loading in aquatic environments. In addition, the effect of climate change on ocean conditions is the greatest identified threat to Southern DPS eulachon." In light of these stressors, and the failure of restoration efforts to sufficiently reduce extinction risk thus far, the elevation of sediments under the Proposed Project constitutes a cumulatively considerable contribution to adverse effects in the short term.

As noted in Section 3.16.7.1 of the EIS, avoidance or mitigation of reservoir sediment release and its impact on specific lifestages of the eulachon is not feasible.

EIS Section 3.16.7.4

The State Water Board finds that implementation of the Proposed Project and removal of facility structures and deconstruction-related activities would have adverse effects on roosting, hibernating, and maternity sites of bat species. Effects of the Proposed Project on bats would occur from the loss of dam structures and associated facilities used as roosting habitat. The Proposed Project's incremental contribution to adverse cumulative effects on bats could be significant because bats roost in all four dams or in their associated facilities and structures and these would be removed; however, the KRRC would provide mitigation for bats, including prohibiting removal of structures when maternity colonies are present and following the National White-Nose Syndrome

Decontamination Protocol. Long-term effects would be mitigated by creating or enhancing artificial roosting habitat and using bat gates to continue to provide access to tunnels and conveyances to maternity, roosting, and hibernating sites; bat surveys; exclusion measures; maintaining bat access to the Copco No. 2 overflow spillway outlet portal and the surge vent opening; and the creation of bat roosting habitat. Therefore, the Proposed Project incremental contribution to effects on bats would not be cumulatively considerable. (EIS, page 612.)

EIS Section 3.16.9.1

The State Water Board finds that the Proposed Project's incremental contribution to cumulative impacts on archeological sites, historic sites and TCPs would be cumulatively considerable. While mitigation has been incorporated for these impacts, it is not feasible to mitigate all potential adverse effects of the proposed action on these resources.

Historic displacement of California Native American Tribes in the area of the hydroelectric projects has led to loss of traditional lands and culture. The creation of the hydroelectric project resulted in disturbance of cultural resources, including through flooding. After construction, past and current operation of the hydroelectric project, including fluctuating water levels, has further disturbed cultural resources, including exposure to theft and exposure of buried remains. In light of such past and present impacts, the additional disturbance of cultural sites under the Proposed Project constitutes a significant contribution to cumulative impacts.

The Historic Properties Management Plan will mitigate the Proposed Project's impacts on newly-exposed sites, changes to the riverscape, and the associated potential for damage, including through increased looting or vandalism. However, the impacts remain a significant contribution to cumulative effects that is not feasible to avoid or further mitigate.

The Partial Removal, Two Dam Removal, Three Dam Removal, and the No Hatchery Alternatives would all result in significant cumulative impacts on archeological sites, historic sites and TCP's because these alternatives include drawdown of project reservoirs which may disturb cultural sites.

Under the No Project and Continued Operations with Fish Passage Alternatives the reservoirs and Klamath River below Iron Gate Dam would be unchanged, therefore, these alternatives would not result in significant cumulative impacts on archeological sites, historic sites and TCP's *EIS Section 3.16.9.2*

The State Water Board finds that the Proposed Project's incremental contribution to cumulative impacts on Klamath River Hydroelectric Project Historic District would be significant. While mitigation has been incorporated for these impacts, it is not feasible to mitigate all potential adverse effects of the proposed action on these resources.

The Proposed Project includes removal of many of the facilities that constitute the Klamath River Hydroelectric Project Historic District. Removal of the facilities is unavoidable in implementing the Proposed Project. Other potential actions that are likely to occur that could also affect the District include additions to buildings, replacement of equipment, internal reconfiguration of buildings, demolition of structures or lack of maintenance of facilities.

The Proposed Project's Historic Properties Management Plan, in combination with FERC Staff Recommended Modifications would mitigate adverse effects, including through documentation. However, even with mitigation, the adverse effects remain cumulatively significant.

The Partial Removal, Two Dam Removal, Three Dam Removal, and the No Hatchery Alternatives would all result in significant cumulative impacts on the Klamath River Hydroelectric Project Historic District because these alternatives require the decommissioning and removal of Project facilities.

The No Project and Continued Operations with Fish Passage Alternatives do not involve the decommissioning and removal of Project facilities, therefore, these alternatives would not result in significant cumulative impacts on the Klamath River Hydroelectric Project Historic District.

Air Quality

Potential Impact 3.24-33, EIS Section 3.16.13

The State Water Board finds that the Proposed Project's contribution to short-term increases in air emissions, including NOx[26], under the Proposed Project in combination with forest and wildfire management projects, construction projects related to population increase, and past and present development activities would be cumulatively considerable. It is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

During the Proposed Project construction period (Volume I Table 2.7-1), there are proposed wildfire management activities, including prescribed or controlled burning, on national forest lands in Siskiyou County (see Volume III Attachment 1 Table RE-3.24-1 for list of related projects). If these burning activities temporally overlap the Proposed Project construction period and produce substantial quantities of smoke near the Area of Analysis for air quality, they would result in significant and adverse emissions of criteria air pollutants within the air quality Area of Analysis. On a more general level,

[26] EIS, page 3-625's summary statement on cumulative air quality impacts states that the unmitigated cumulative contribution is from PM10, not NOx. This appears to be an error, since the analysis in EIS Sections 3.15.3.1 explicitly states that air quality measures will reduce PM10 to below the Siskiyou County Air Pollution Control District (SCAPCD) level of 250 lbs/day, while NOx emissions will remain above that threshold.

anticipated population and housing growth "could increase traffic, utility demands, and construction projects, which could all result in increased air pollution." "Additionally, air pollutant emissions associated with past and present development and activities have contributed to local and regional air pollution." (EIS, page 3-625.) However, given that the Proposed Project would be well below thresholds for other criteria pollutants with mitigation, including PM10, PM2.5, CO, SOx, and ROG, the incremental impact of the Proposed Project would not be cumulatively considerable with respect to those pollutants. Given the Proposed Project exceeds criteria thresholds for NOx after the implementation of mitigation, the incremental impact of the Proposed Project to the total emissions would be cumulatively considerable.

Hazards and Hazardous Substances

Potential Impact 3.24-64

The State Water Board finds that the Proposed contribution to short-term and long-term hazards (fire-fighting water access) from the Proposed Project in combination with non-project activities would be cumulatively considerable. It is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091, subd. (a)(3)).

The Proposed Project will result in a long-term reduction in reservoir storage that can be used for fighting wildland fires. The impact is significant because it stands to increase public loss in case of a wildland fire, and unavoidable because it is a necessary consequence of removing the Lower Klamath Project dams.

Since issuance of the EIR, the KRRC has developed a FMP which identifies strategies to mitigate for the loss of the Project reservoirs and provide tong-term local and regional fire suppression resources. The FMP includes the installation of an early fire detection monitoring system, installing dry hydrants at road crossings, and will provide a mobile chipper, dump bed trailer, and truck to the Fire Safe Council of Siskiyou County to assist landowners with improving defensible space around home sites to reduce the risk of structure fires. Additionally, CAL FIRE concludes that the December 2021 version of the FMP is adequate to address and manage fire risks associated with dam removal (EIS page 3-453).

Statement of Overriding Considerations

Potential Impact 3.24-2

As indicated above there would be the potential for a cumulative short-term increase in SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combined effect of the Proposed Project and the 2017 flow requirements in water years when the Proposed Project reservoir drawdown flows do not meet the surface and/or deep flushing flow requirements. As explained above in Potential Impact 3.2-4, mitigation or avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a contribution to short-term increases in suspended sediments that would be cumulatively considerable

However, the combined effect of the Proposed Project and the other restoration, flow enhancement, and water quality improvement projects would be beneficial for water quality, especially for water temperature and chlorophyll-a and algal toxins. The restoration, flow enhancement, and water quality improvement projects would increase the amount of cold water flowing in the river improving water temperature conditions for salmonids, while the Proposed Project would improve water temperature by returning more natural seasonal and daily variations. In combination with restoration, flow enhancement, and water quality improvement projects, the Proposed Project would help to offset the effects of climate change on late summer/fall water temperatures. Increases in river flows from restoration, flow enhancement, and water quality improvement projects would also be beneficial for water quality by diluting chlorophyll-a and algal toxins concentrations, while the Proposed Project would decrease high seasonal chlorophyll-a concentrations and periodically high algal toxin concentrations. The long-term cumulative benefits of the Proposed Project, as well as the water quality benefits described in the water quality section above, support the State Water Board's approval of the Proposed Project despite the considerable contribution to cumulative impacts related to short-term increases in suspended sediments.

Potential Impact 3.24-4

As indicated above, the short-term cumulative increase in SSCs from a late-season wildfire followed by heavy rains would not be likely to increase the magnitude of SSCs outside the range modeled for the Proposed Project. However, the short-term impact is conservatively assessed as cumulatively considerable given that the Proposed Project exceeds significance criteria for SSCs, and because of the potential for an extended duration of elevated SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combination of the Proposed Project and wildfires. As explained above, mitigation or avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a contribution to short-term water quality effects in combination with wildfires that would be cumulatively considerable.

However, in addition to the water quality and cumulative benefits described above, the Proposed Project would also reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the considerable contribution to cumulative impacts related to short-term water quality effects.

EIS Section 3.16.9.1

As indicated above, the Proposed Project will disturb cultural sites through the drawdown of Project reservoirs and the changes to the riverscape of the Klamath River. The Proposed Project's Historic Properties Management Plan would mitigate impacts to newly exposed sites and changes to the riverscape, but not to a level that would be considered less than significant. As explained above, mitigation or avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a contribution that is cumulatively considerable to archaeological sites, historic sites, and TCPs.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the cumulatively considerable contribution to impacts related to archaeological sites, historic sites, and TCPs.

EIS Section 3.16.9.2

As indicated above, the Proposed Project includes the removal of many of the facilities that constitute the Klamath River Hydroelectric Project Historic District. The Proposed Project's Historic Properties Management Plan would mitigate adverse effects, but not to a level that would be considered less than significant. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a contribution that is cumulatively considerable to the Klamath River Hydroelectric Project Historic District.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the

significant and unavoidable impacts related to the Klamath River Hydroelectric Project Historic District.

Potential Impact 3.24-33

As indicated above, if these burning activities associated with wildlife management activities temporally overlap the Proposed Project construction period and produce substantial quantities of smoke near the Area of Analysis for air quality, they would result in significant and adverse emissions of NOx within the air quality Area of Analysis. Additionally, the FERC EIS finds that vehicle exhaust and fugitive dust emissions from the removal of dams could increase emissions of NOx that would exceed the Siskiyou County Air Pollution Control District threshold, therefore, the proposed action's incremental contribution to cumulative effects on air quality during deconstruction would be significant. As explained above, mitigation or avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a contribution to short-term increases in NOx in combination with forest and wildfire management projects that is cumulatively considerable.

However, in addition to the cumulative benefits described above, the Proposed Project would have the following beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the cumulatively considerable contribution to short-term increases in NOx emissions.

Potential Impact 3.24-64

Approval of the Proposed Project would contribute to a reduction in fire suppression capabilities that is cumulatively considerable. As described above, the Proposed Project will result in a long-term reduction in reservoir storage that can be used for fighting wildland fires. Since issuance of the EIR, the KRRC has developed a FMP which identifies strategies to mitigate for the loss of the Project reservoirs and provide tong-term local and regional fire suppression resources. The FMP also identifies long term replacement water sources that provide similar benefit to the Project reservoirs that will be removed. The FMP includes the installation of an early fire detection monitoring system, installing dry hydrants at road crossings, and will provide a mobile chipper, dump bed trailer, and truck to the Fire Safe Council of Siskiyou County to assist landowners with improving defensible space around home sites to reduce the risk of structure fires. Additionally, CAL FIRE concludes that the December 2021 version of

the FMP is adequate to address and manage fire risks associated with dam removal (EIS page 3-453).

The broad, environmental benefits of the Proposed Project include that it would: significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the long-term significant and unavoidable impact of reduced access to fire-fighting water.

Conclusions

The State Water Board recognizes that the Proposed Project may result in unavoidable cumulatively considerable impacts, as described above. The State Water Board finds that these impacts are outweighed by the broad environmental benefits of the Proposed Project.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Summary of Conclusions

As set forth above, based on the EIR and the record, the State Water Board finds that each potentially significant impact of the Proposed Project has either been mitigated to less than significant or is unavoidable. As also set forth above, based on the EIR and the record, the State Water Board finds that the extensive environmental benefits of the Proposed Project, with their related social and economic benefits, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts that could result from approval. Finally, based on the EIR and the record, the State Water Board finds that in light of the benefits of the Proposed Project the significant and unavoidable impacts are, on both an individual and a collective basis, acceptable consequences of project approval.

ATTACHMENT 4

AMENDED MITIGATION, MONITORING, OR REPORTING PROGRAM FOR THE LOWER KLAMATH PROJECT LICENSE SURRENDER

Mitigation, Monitoring, or Reporting Program for the Lower Klamath Project License Surrender

Prepared by:
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812-2000

November 2022

Mitigation, Monitoring, or Reporting Program for the Lower Klamath Project License Surrender

Lead Agency:
State Water Resources Control Board

For additional information concerning this document please contact the Water Quality Certification Program at WR401Program@waterboards.ca.gov

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Table of Contents

ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CWA	Clean Water Act
DO	dissolved oxygen
Drawdown Plan	Reservoir Drawdown and Diversion Plan
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
Fish Presence Plan	Fish Presence Monitoring Plan
Hatcheries Plan	Hatcheries Management and Operations Plan
HPMP	Historic Properties Management Plan
KRRC	Klamath River Renewal Corporation
LVPP	Looting and Vandalism Prevention Program
MMRP	Mitigation, Monitoring, or Reporting Program
North Coast Regional Board	North Coast Regional Water Quality Control Board
NPDES	National Pollutant Discharge Elimination System
ODEQ	Oregon Department of Environmental Quality
Operations Plan	Hydropower Operations Plan
Salmonid Plan	Juvenile Salmonid Rescue and Relocation Plan
SHARP	Spawning Habitat Availability Report and Plan
State Water Board	State Water Resources Control Board
SSC	suspended sediment concentrations
SWPPP	Stormwater Pollution Prevention Plan
TCR	Tribal Cultural Resource
TCRMP	Tribal Cultural Resources Management Program
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WQMP	Water Quality Management Plan

1 INTRODUCTION

The State Water Resources Control Board (State Water Board) has prepared an Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA)[1] for the Lower Klamath Project License Surrender (Proposed Project) (State Clearinghouse No. 2016122047). The EIR identifies numerous mitigation measures to reduce the Proposed Project's potentially significant environmental impacts. Additionally, the Federal Energy Regulatory Commission (FERC or Commission) has completed additional environmental review under the National Environmental Policy Act, namely the *Final Environmental Impact Statement for Hydropower License Surrender and Decommissioning, Lower Klamath Project – FERC Project No. 14803-001, Klamath Hydroelectric Project-FERC Project No. 2082-063, Oregon and California* (EIS).[2] Under Public Resources Code, section 21166.2, these documents satisfy the requirements of CEQA for this project. The Board has amended the Mitigation, Monitoring, or Reporting Program (MMRP) in light of the water quality certification amendments and additional environmental review.

CEQA requires public agencies to prepare a program for monitoring or reporting on the changes to the project or the measures they have required or imposed to mitigate or avoid significant environmental effects (CEQA Guidelines Section 15097 subdivision (a)). This MMRP fulfills that requirement. For each impact area for which mitigation measures have been adopted pursuant to CEQA, this MMRP identifies the potential impacts evaluated in the EIR and EIS, provides the significance determination of the potential impacts, and describes the mitigation measures and relevant conditions of the water quality certification. The mitigation measures and water quality certification conditions include detailed requirements for monitoring and reporting, and the conditions of the water quality certification will also ultimately become enforceable conditions of the FERC license. Where the mitigation measure does not include monitoring and reporting requirements, and such requirements are outside of the State Water Board's water quality certification authority, the State Water Board has requested that

[1] Public Resources Code, Sections 21000 *et seq*.

[2] The EIS was prepared under the National Environmental Policy Act, which, unlike CEQA, does not provide for specific consideration of mitigation measures. The types of changes considered to the Proposed Action in the second and third alternatives presented in the EIS (Mandatory Conditions and Proposed Action with Staff's Modifications), are akin to the type of changes that CEQA would consider to be mitigation, rather than as alternatives to undertaking the Proposed Project. (See EIS, page 4-1 ["As a result of [continued agency] consultation, and the minor nature of [FERC] staff's modifications, the overall effects and benefits of the proposed action with staff modifications are not substantively different from the proposed action.].) Therefore, the State Water Board considers the adjustments discussed in the Proposed Action with Staff's Modifications as mitigation measures rather than as separate alternatives.

FERC include reporting requirements for these mitigation measures in FERC's final order for the Lower Klamath Project License Surrender. The summaries of the EIR and EIS impact determinations for the Proposed Project within this MMRP do not replace or alter the complete CEQA and NEPA impact analyses that are contained in the EIR and EIS.

The Section 401 water quality certification process is different from CEQA in that water quality certification conditions are not aimed solely at mitigating impacts to the environmental baseline but are more broadly directed at achieving water quality objectives and protecting designated beneficial uses. Accordingly, for some impact areas there are associated water quality certification conditions even though mitigation measures are not required under CEQA. In addition to identifying water quality certification conditions that are related to implementation of mitigation measures, this MMRP identifies applicable water quality certification conditions related to each Proposed Project impacts analyzed in the EIR and EIS even where the EIR or EIS impacts were not found to be potentially significant. Impacts with no mitigation nor any related water quality certification conditions are listed in Appendix I.

Where the water quality certification is conditional on the "Licensee" undertaking planning, consultation, mitigation, monitoring, and reporting, the "Licensee" is the KRRC unless another entity is identified as the licensee by FERC; therefore, the summaries of conditions in this MMRP refer to the obligations of the KRRC. The water quality certification would become effective through and is enforceable as part of any decommissioning license issued by FERC. Implementation of water quality certification conditions, and modifications thereof, are subject to the review and approval of the Deputy Director for the State Water Board Division of Water Rights (Deputy Director). Several water quality certification conditions also require the KRRC to consult with other agencies, including, but not limited to, the North Coast Regional Water Quality Control Board (North Coast Regional Board), Oregon Department of Environmental Quality (ODEQ), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), and United States Army Corps of Engineers (USACE). Water quality certification Conditions 24 through 41 are general in nature, thus are not specific to any of the EIR or EIS impacts discussed in the main body of this document.

As described throughout this document, mitigation, monitoring, and reporting requirements are embedded in the EIR mitigation measures and also set forth in the water quality certification conditions. Checklists of the planning, consultation, mitigating actions, monitoring, and reporting required by the EIR mitigation measures, EIS, and water quality certification conditions are provided in Section 1.1 below. The KRRC is responsible for implementing and attaining all the EIR and EIS mitigation measures and water quality certification conditions, although responsibility may be delegated to its contractors.

Finally, please note that due to the preemptive effect of the Federal Power Act, the State Water Board is unable to impose mitigation measures or conditions of water quality certification for all potentially significant impacts. The Federal Power Act gives FERC broad authority to regulate power production facilities in such a manner that FERC "occupies the field" of power regulation. This means that there is no authority for state- or local-level regulation to enforce mitigation measures except where there is an exception to the general rule of preemption. Both the United States Supreme Court and the Ninth Circuit Court of Appeals have clarified the broad preemptive reach of the Federal Power Act regarding state authority in hydropower licensing decisions. The Federal Power Act's "field preemption" applies to hydropower licensing decisions – such as the KRRC's decommissioning application – unless there is an exception to the preemption. One exception from the Federal Power Act's "field preemption" is state water quality certification under Section 401 of the Clean Water Act (for more detail, please see Vol. III, Section 2.2.2 of the EIR). For some mitigation measures outside of the State Water Board's water quality certification authority (for example, Impact 3.9-1 in Section 2.7 of this document), mitigation measures are identified in this document because the KRRC has agreed to implement them and to submit them to FERC as part of its license application. In these cases, the State Water Board requests that FERC incorporate monitoring and reporting requirements on the mitigation measures that KRRC has agreed to but are not part of the water quality certification into the FERC license.

1.1 Required Planning, Consultation, Mitigating Actions, Monitoring, and Reporting

The water quality certification sets forth conditions that the KRRC is required to implement through the FERC license. The checklists below identify planning, consultation, mitigation, monitoring, or reporting actions the KRRC is required to implement either through mitigation measures and/or the water quality certification conditions (labeled as WQC, Condition X).

Planning

- Stormwater Pollution Prevention and Protection Plan (SWPPP) (WQC Condition 10)
- California Water Quality Management Plan (WQMP) (WQC Condition 1)
- Suspended Sediment Load Quantification Methodology (WQC Condition 1)
- Water quality monitoring and protection plans for ground disturbing activities (WQC Condition 10)
- Reservoir Drawdown and Diversion Plan (Drawdown Plan) (WQC Condition 3)
- California Sediment Deposition Remediation Plan, which notes the KRRC will assess sediment deposits for two years following drawdown on parcels with a current or potential residential or agricultural land use, for which the property owner has notified KRRC of a sediment deposit that may be associated with reservoir drawdown activities (WQC Condition 4; FERC Staff Modification, Bullet 3)

- Slope Stability Monitoring Plan (WQC Condition 18)
- Hydropower Operations Plan (Operations Plan) (if drawdown is not initiated within 24 months of FERC license surrender) (WQC Condition 20)
- Spawning Habitat Evaluation (WQC Condition 6)
- Anadromous Fish Presence Monitoring Plan (Fish Presence Plan) (WQC Condition 5)
- Tributary-Mainstem Connectivity Plan that includes monitoring and adaptive management to offset barriers created as a result of the project and sediment impacts on mainstem spawning (WQC Condition 6)
- Spawning Habitat Availability Report and Plan (SHARP) (WQC Condition 6)
- Juvenile Salmonid Rescue and Relocation Plan (Salmonid Plan) (WQC Condition 6)
- Adaptive Management Plan including sampling, salvage, and relocation of Lost River and shortnose suckers (WQC Condition 6)
- Hatcheries Management and Operations Plan (Hatcheries Plan) (WQC Condition 13)
- Restoration Plan, with the goal of protecting wetland or riparian habitat functions as well as ensuring restoration of the reservoirs' footprints (WQC Condition 14)
- Fire Management Plan (WQC Condition 15)
- Amphibian and Reptile Rescue and Relocation Plan, including Western Pond Turtles (WQC Condition 16)
- California Public Drinking Water Management Plan, which details drinking water mitigation measures for each potentially affected water supply (WQC Condition 8)
- Remaining Facilities Plan (WQC Condition 7)
- Water Supply Management Report, including consideration of fire protection (WQC Condition 15)
- Recreation Facilities Plan (WQC Condition 19)
- Waste Disposal Plan (WQC Condition 11)
- Hazardous Materials Management Plan (WQC Condition 12)
- Historic Properties Management Plan (HPMP), including a Tribal Cultural Resources Management Program (TCRMP) (Mitigation Measure TCR-1)
- Looting and Vandalism Prevention Program (LVPP) (Mitigation Measure TCR-2)
- Inadvertent Discovery Program, as part of the TCRMP (Mitigation Measure TCR-3)
- Transportation and Traffic Management Plan (Mitigation Measure TR-1)

Consultation

- Consult with State Water Board and North Coast Regional Board on compliance proposals to address water quality exceedances (WQC Condition 2)
- Consult with drinking water providers in relation to impacts to the Klamath River water supply (WQC Condition 8)

- Outreach to residents to identify groundwater wells within 1,000 feet of the reservoirs' ordinary high-water mark (WQC Condition 15)
- Notify the State Water Board Deputy Director of the Division of Water Rights (Deputy Director) within 24 hours of initiation and conclusion of drawdown activities at each reservoir (WQC Condition 3)
- Coordinate any potential changes to operation of the Klamath Irrigation Project that may be needed to implement the proposed action with the United States Bureau of Reclamation, NMFS, and USFWS (WQC Condition 3 and FERC Staff Modification, Bullet 14)
- Submit to the Hoopa Valley Tribe, Resighini Rancheria, Karuk Tribe, and any other tribe that has obtained treatment-in-the-same-manner-as-a-state status the 32-month report on water quality compliance status, as well as monthly water quality reports required by the WQMP (WQC Condition 22)
- Consult with the USACE, CDFW, North Coast Regional Board, and State Water Board for chemical vegetation control (WQC Condition 9)
- Consult with State Water Board staff regarding potential modifications to or transfer of state-issued water right permits and licenses, prior to changing any water diversion (WQC Condition 21)
- Consult with American Whitewater and Upper Klamath Outfitters Association to schedule construction activities and access restrictions during construction to minimize adverse effects on whitewater boaters (WQC Condition 19 and FERC Staff Modification, Bullet 10)
- Discuss the process for determining land disposition with stakeholders, including discussions with Shasta people, consideration of title encumbrance, wildlife conservation management areas, and tribal conservation easements (Mitigation Measure TCR-6, TCR-7 and TCR-8)
- Consult on a revised HPMP with the Oregon State Historic Preservation Officer (SHPO), California SHPO, participating Tribes, and other appropriate agencies and organizations to address resolution of adverse effect on specific archaeological sites, TCRs 5-8 in Board's EIR, and inclusion of comments, recommendations, and section 106 determinations received Oregon SHPO, California SHPO, Advisory Council, and KRRC's response to comments (FERC Staff Modification, Bullet 11)
- Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan (WQC Condition 11 and FERC Staff Modification, Bullet 5)
- Include a public outreach component in the Fire Management Plan that specifically addresses communication related to emergency planning with environmental justice communities (WQC Condition 15 and FERC Staff Modification, Bullet 13)
- Any consultation required by the planning documents (see list above), or as an outcome of monitoring (see list below), for the Proposed Project

Mitigating Actions (i.e., actions required to be implemented by EIR or EIS mitigation measures or water quality certification conditions)

- Salvage mainstem overwintering juvenile salmonids (WQC Condition 6)
- Relocate western pond turtle per the Western Pond Turtle Rescue and Relocation Plan (WQC Condition 16)
- Drinking water measures for potentially affected drinking water (WQC Condition 8)
- Construct a replacement pipe for the City of Yreka's current water supply pipeline that crosses Iron Gate Reservoir, with any water delivery outage limited to 12 hours or another water delivery outage timeframe agreed upon between the City of Yreka and the KRRC (WQC Condition 8)
- Decommission in place, or remove and dispose of, septic tanks (WQC Condition 12)
- Fund an endowment or other appropriate organization to protect and enhance exposed Tribal Cultural Resources (TCRs), as part of the TCRMP (Mitigation Measure TCR-4)
- Identify land that may be transferred to an entity representative of Affected Tribes as off-site mitigation, prior to completing the TCRMP (Mitigation Measure TCR-8)
- Inspect structures being removed for hazardous materials (WQC Conditions 7 and 12)
- Offer property owners the opportunity to choose coverage under the Local Impact Mitigation Fund (LIMF). The LIMF will provide financial resources to property owners electing to opt into the fund to mitigate displacement costs and impacts to residential properties that are determined to be caused by implementing the Project (WQC Condition 18)
- Target drawdown water surface level rate to five feet per day (WQC Condition 3)
- Maximum additional discharge: below Copco No. 1 Dam associated with Copco No. 1 drawdown of approximately 4,200 cubic feet per second (cfs); below Iron Gate Dam associated with Iron Gate drawdown of approximately 4,000 cfs (WQC Condition 3)
- Best management practices (BMPs) for ground-disturbing activities, updated if appropriate based on consultation with appropriate California agencies and Tribes (WQC Condition 10 and FERC Staff Modification, Bullet 2)
- Comply with 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) (WQC Condition 10)
- 20-foot buffer around all non-reservoir dependent, delineated wetlands potentially affected by construction impacts (WQC Condition 14)
- Cofferdams, construction pads, or equivalent barriers to isolate construction areas from instream flow (WQC Condition 3)
- Aquatic formulation of glyphosate during dry weather, if used, or another low toxicity herbicide (WQC Condition 9)

- Implement the Eagle Take Permit Associated with but not the Purpose of the Surrender and Decommissioning of the Lower Klamath Hydroelectric Project, Nos. 14803-001, 2082-063 (WQC Condition 17)
- Inspect slope failures and repair or move affected structures and utilities or purchase affected property, realign road segments, engineer structural slope improvements, and/or revegetate affected areas (WQC Condition 18, Mitigation Measure GEO-1)
- If arsenic in deposited reservoir sediments exceeds background levels and United States Environmental Protection Agency or California Environmental Protection Agency human health residential screening criteria, or if Licensee decides to proceed with remediation of deposited reservoir sediments in the absence of testing, remediate to local background levels through removal or soil capping (WQC Condition 4)
- Screen dewatering pump intakes and seal of bypass routes (pipelines, outlets) upon completion of Proposed Project activities to prevent human and wildlife access (WQC Condition 3)
- Water pumps used for irrigation must be screened to prevent fish injury or entrainment (WQC Condition 14; FERC Staff Modification, Bullet 7)
- Apply the Yurok Tribe's Cultural Resource Ordinance and Inadvertent Discovery Policy to TCRs on the Yurok Reservation (Mitigation Measure TCR-5)
- Transfer some Parcel B lands to an entity representative of Affected Tribes (Mitigation Measure TCR-6)
- If ground conditions permit access for depositional sediment grading during reservoir drawdown, include provisions in the Reservoir Area Management Plan for a cultural monitor to be present to ensure that if any cultural resources are identified on the historical pre-dam ground surface, grading stops and the measures outlined in appendix B, section 7.1 of the HPMP (Monitoring and Inadvertent Discovery Plan, Procedures) are closely followed within 48 hours. These protocols include, but are not limited to: (1) notifying the team supervisor of any discovery of cultural or archaeological resources, (2) suspending work within 100 feet of the find in all non-dewatering situations, (3) completing an initial assessment of the discovery, (4) notifying the Commission, SHPO, and participating Tribes of the find, and (5) consulting with these entities to determine and implement agreed-upon treatment measures for discoveries that are potentially eligible for listing in the National Register. (WQC Condition 14 and FERC Staff Modification, Bullet 12)
- Develop and implement a Traffic Management Plan that includes applicable regulatory requirements regarding traffic control and management, construction of roads, bridges, and culverts according to relevant state transportation agency requirements and specifications, and repair and/or rehabilitation of any Siskiyou County roadways within the traffic and transportation Area of Analysis identified in the EIR (Mitigation Measure TR- 1)

- Preferred time frame for structure removal that provides roosting habitat for bats is September 1 to March 31, as recommended by USFWS (rather than proposed dates of September 31 to April 15) and comply with USFWS' recommendations for roost structure removal, if necessary, between April 1 and August 31 (FERC Staff Modification, Bullet 9)
- Preference given to contractors that meet or exceed United States Environmental Protection Agency's exhaust emission standards for model year 2010 or newer heavy-duty on-highway compression-ignition engines (FERC Staff Modification, Bullet 1)
- Any actions required by the planning documents (see list above), or as an outcome of monitoring (see list below), for the Proposed Project

Monitoring

- Continuously monitor dissolved oxygen (DO), water temperature, turbidity, conductivity, and pH for the duration of the license surrender order unless otherwise approved (WQC Condition 1)
- Collect and analyze grab samples of total nitrogen, nitrate, nitrite, ammonia, total phosphorus, particulate organic phosphorus, orthophosphate, particulate organic carbon, dissolved organic carbon, chlorophyll-a, turbidity, microcystin, suspended sediment concentrations, methylmercury, settleable solids, and particulate and dissolved aluminum for the duration of the license surrender order unless otherwise approved (WQC Condition 1)
- Monitor arsenic, lead, copper, nickel, iron, aluminum, dioxin, cyanide, mercury, ethyl-benzenes, total xylenes, dieldrin, 4,4'- dichlorodiphenyltrichloroethane (DDT), 4,4'- dichlorodipiphenyldichloroethane (DDD), 2,3,7,8- tetrachlorodibenzodioxin (TCDD), 4,4'- dichlorodiphenyldichloroethylene (DDE), and 2,3,7,8- pentachlordibenzofuran (PECDF) from sediment samples at the frequency established in the amended water quality certification (WQC Condition 1)
- For fecal coliform and *E. coli* in the vicinity of recreational facilities, collect and analyze grab samples June-September pre-drawdown and twice every year until the facility is transferred to a new owner or as otherwise approved (WQC Condition 19)
- Annually (from May through October) monitor for microcystin toxin in the vicinity of all Proposed Project recreation facilities that provide for recreational water contact for two years (WQC Condition 19)
- Quantify sediment loads at 12 months and 24 months post-drawdown (WQC Condition 1)
- Anadromous fish presence surveys beginning in the fall of the first year following the completion of drawdown. Monitoring will occur for at least four years, with annual reporting (Condition 5)
- Monitor tributary confluences for two years for sediment impacts on mainstem spawning (WQC Condition 6)

- Maintain tributary-mainstem connectivity to ensure volitional fish passage between tributaries and the Klamath River and develop a water quality monitoring network, trigger thresholds, and plan for salvaging and relocating juvenile fish from tributary confluence areas to cool water tributaries or nearby off-channel ponds for two years post-drawdown (WQC Condition 6)
- Yearling coho salmon pre-drawdown surveys (WQC Condition 6)
- Extend survey area for bird nest visual encounter surveys to include a 250-foot buffer of the disturbance area for non-eagle raptor nests and a 50-foot buffer of the disturbance area for nests of all other birds (FERC Staff Modification, Bullet 8)
- Monitor groundwater levels for at least two months pre-drawdown and for two years post-drawdown (WQC Condition 15)
- Western pond turtle pre-construction surveys (WQC Condition 16)
- Monitor potentially unstable slopes along the Copco No. 1 Reservoir Rim during and for two weeks following drawdown (WQC Condition 18)
- Assess visibly obvious sediment deposits in the Middle and Lower Klamath River that may have been deposited in areas with a residential or agricultural land use during reservoir drawdown and, where applicable, test them for arsenic (WQC Condition 4)
- Periodic estimation of suspended sediment loads and adaptive management measures for sediment loads (WQC Condition 1 and FERC Staff Modification, Bullet 4)
- Identify potential cool-water areas from the upper end of J.C. Boyle Reservoir to Cottonwood Creek, methods for monitoring and analysis, triggers for adaptive management, and schedule (WQC Condition 14)
- Any monitoring requirements required by planning documents (see list above)

Reporting

- Water quality monitoring reports monthly in accordance with the WQMP, prior to, during, and for a minimum of one year following completion of drawdown (WQC Condition 1)
- Sediment load report describing the status of sediment movement at 12 months and 24 months following completion of drawdown (WQC Condition 1)
- Suspended sediment load quantification report in monthly water quality reporting required by WQMP (WQC Condition 1)
- Compliance report within 36 months of beginning drawdown, that documents Proposed Project attainment of sediment-related water quality objectives over a range of flows and post-dam removal Klamath River water quality conditions and establishment of new riverine conditions (WQC Condition 2)
- Sediment testing results for any sediment deposit tested for arsenic, as well as a report on any remediation measures (WQC Condition 4)
- Fish presence report annually which includes a summary of fish presence survey results and an overall assessment of fish presence in newly

accessible reaches. In addition, a fourth annual report shall also include an analysis of whether any encountered fish passage impediments are Proposed Project-related and proposals to remedy any impediments that are Proposed Project-related (WQC Condition 5)

- Tributary-mainstem connectivity reporting annually following connectivity monitoring (WQC Condition 6)
- Spawning habitat evaluation (WQC Condition 6)
- Rescue and relocation of juvenile salmonids reporting within six months following implementation of rescue and relocation efforts (WQC Condition 6)
- Summary report of each sucker sampling effort six months following each sampling effort (WQC Condition 6)
- California Public Drinking Water Management Plan summary of implementation within three months concluding implementation of the measures (WQC Condition 8)
- Construction General Permit reporting (WQC Condition 10)
- Waste disposal reporting (WQC Condition 11) and hazardous materials reporting if there is a spill (WQC Condition 12)
- Restoration reporting within six months of concluding drawdown activities, and annually thereafter (WQC Condition 14)
- Suspended sediment load quantification report six months prior to drawdown (WQC Condition 1)
- Cool-water report a minimum of six months prior to drawdown (WQC Condition 14)
- Detailed pre-work maps that identify areas of grading, water runoff control measures, planting, seeding, mulching, and irrigation areas. These maps should include final limits of work zones, delineated wetlands within areas of proposed disturbance, the reservoir footprints, the J.C. Boyle Power Canal and scour hold, and all areas of temporary disturbance where revegetation activities would occur (WQC Condition 14 and FERC Staff Modification, Bullet 7)
- Water supply management reporting prior to and annually for the first two years following drawdown on implementation of the surface water supply activities (WQC Condition 15)
- Groundwater report annually for a minimum of two years following completion of drawdown (WQC Condition 15)
- Amphibian and reptile reporting (WQC Condition 16)
- Slope stability reporting annually summarizing monitoring and inspection information and monthly during the rainy season to identify any areas that have experienced slope instability, actions taken to control and improve slope stability, and an assessment of success of those actions (WQC Condition 18)
- Recreation facilities reporting annually on the status of any proposed construction, removal, or modifications to Proposed Project recreation facilities as well as water quality monitoring results for recreation areas (WQC Condition 19)
- Tribal water quality standards (WQC Condition 22)

- Any reporting requirements required by FERC pursuant to State Water Board Request (Mitigation Measures AQ-1 – AQ-5, Mitigation Measure ENR-1, Mitigation Measures TCR-1 – TCR-8, Mitigation Measure TR-1)
- Any other reporting required by the planning documents (see list of proposed plans, above), or as an outcome of monitoring, for the Proposed Project

2 PROPOSED PROJECT IMPACTS, MITIGATION, AND CONDITIONS

2.1 Water Quality

Potential Impact 3.2-1 Short-term and long-term alterations in water temperatures due to conversion of the reservoir areas to a free-flowing river.

- *Beneficial* for the Hydroelectric Reach and the Middle Klamath River to the confluence with the Salmon River, in the short term and in the long term
- *No significant impact* for the Middle Klamath River downstream from the Salmon River, Lower Klamath River, Klamath River Estuary, and Pacific Ocean nearshore environment in the short term or the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-2 Short-term and long-term alterations in seasonal water temperatures in the Klamath River Estuary due to morphological changes induced by dam removal sediment release and subsequent deposition in the estuary.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-3, and EIS page 3-86 Increases in suspended sediments due to release of sediments currently trapped behind the dams.

- *Significant and unavoidable with mitigation* in the short term for the Hydroelectric Reach, Middle Klamath River, Lower Klamath River, Klamath River Estuary, and Pacific Ocean nearshore environment

- *No significant impact* in the long term for the Hydroelectric Reach, Middle Klamath River, Lower Klamath River, Klamath River Estuary, and the Pacific Ocean nearshore environment

EIR and EIS Mitigation

- *FERC Staff Modification, Bullet 4 – Modify the Oregon Water Quality Management Plan and California Water Quality Monitoring Plan to include: (1) periodic estimation of suspended sediment loads at the six proposed continuous monitoring stations at USGS gages (table 2.1-2); and (2) add adaptive management measures for sediment loads.* (EIS, page 2-73)
- *FERC Staff Modification, Bullet 3 - Modify the California Sediment Deposit Remediation Plan to include the period of time (years) during which KRRC would assess sediment deposits on parcels with a current or potential residential or agricultural land use, for which the property owner has notified KRRC of a sediment deposit that may be associated with reservoir drawdown activities.*
- *FERC Staff Modification, Bullet 14 – Coordinate with the United States Bureau of Reclamation, NMFS, and USFWS for any potential changes to operation of the Klamath Irrigation Project that may be needed to implement the Project.*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 18 – *Slope Stability*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-4, and EIS page 3-86: Increases in suspended material from stormwater runoff due to pre-construction, dam deconstruction and removal, and restoration activities in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure WQ-1 – Best management practices to reduce potential impacts to water quality due to pre-construction, dam removal, and restoration-related activities.* (as described under Potential Impact 3.2-4)
- *FERC Staff Modification, Bullet 2 – Develop, in consultation with appropriate California agencies and Tribes, an erosion and sediment control plan that identifies erosion and sediment control best management practices (BMPs) to minimize pollution from sediment erosion caused by facilities removal and restoration activities that would take place in California.* (EIS, page 2-73)

- *Mitigation Measure TER-1 – Establish a 20-foot buffer around non-reservoir dependent, delineated wetlands*. (as described under Potential Impact 3.5-1)
- *Mitigation Measure HZ-1 – Hazardous Materials Management*. (as described under Potential Impact 3.21-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 7 – *Remaining Facilities*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- *Condition 14 - Restoration*
- Condition 19 – *Recreation Facilities*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-5 Long-term alterations in mineral (inorganic) suspended material from the lack of continued interception and retention by the dams.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-6 Long-term alterations in algal-derived (organic) suspended material from the lack of continued interception and retention by the dams.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-7 Short-term increases in sediment-associated nutrients due to release of sediments currently trapped behind the dams.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-8 Long-term alterations in nutrients from the lack of interception and retention by the dams and conversion of the reservoir areas to a free-flowing river.

- *No significant impact* in the long term due to lack of annual interception and retention of total nutrients
- *Beneficial* in the long term due to elimination of potential seasonal releases of dissolved nutrients

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-9, and EIS p. 3-101: Short-term increases in oxygen demand and reductions in dissolved oxygen due to release of sediments currently trapped behind the dams

- *Significant and unavoidable in the short term* for Hydroelectric Reach and Middle Klamath River from Iron Gate Dam to the Salmon River
- *No significant impact in the short term* for the Middle Klamath River downstream from the Salmon River, in the Lower Klamath River, or in the Klamath River Estuary

Applicable Water Quality Certification Conditions

- Condition 1 (Category 1) – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-10 Long-term alterations in dissolved oxygen concentrations and daily variability due to conversion of the reservoir areas to a free-flowing river.

- *No significant impact* for daily fluctuations in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam
- *Beneficial* for elimination of summer and fall extremes in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam
- *No significant impact* for winter and spring concentrations in the Hydroelectric Reach and Middle Klamath River
- *No significant impact* in the Lower Klamath River, Klamath River Estuary, and Pacific Ocean nearshore environment

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-11 Alterations in pH and daily pH fluctuations due to a conversion of the reservoir areas to a free-flowing river.

- *No significant impact* for the Hydroelectric Reach at Oregon-California state line in the short term and long term.
- *Beneficial* for the Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam in the short term and long term.

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-12 Alterations in chlorophyll-*a* and algal toxins due to a conversion of the reservoir areas to a free-flowing river.

- *Beneficial* for the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 19 – *Recreation Facilities*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-13, and EIS pages 3-19 and 3-23: Human exposure to inorganic and organic contaminants due to release and exposure of reservoir sediment deposits.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure WQ-2 − Modifications and Monitoring for Transient Non-community and Community Water Systems Using the Klamath River for Their Water Supply*. (as described under Potential Impact 3.2-13)
- *Mitigation Measure WQ-3 − Monitoring and Potential Remediation of Reservoir Sediments Deposited Along the Middle and Lower Klamath River Floodplain*. (as described under Potential Impact 3.2-13)
- *FERC Staff Modification, Bullet 3 − Modify the California Sediment Deposit Remediation Plan to include the period of time (years) during which KRRC would assess sediment deposits on parcels with a current or potential residential or agricultural land use, for which the property owner has notified KRRC of a sediment deposit that may be associated with reservoir drawdown activities. (EIS, page 2-73)*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 4 – *Sediment Deposits*
- Condition 8 – *Public Drinking Water Supplies*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 15 – *Water Supply Monitoring and Management*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Consultation Requirements*

Potential Impact 3.2-14 Freshwater and marine aquatic species exposure to inorganic and organic contaminants due to release of sediments currently trapped behind the dams.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-15 Short-term increases in inorganic and organic contaminant from hazardous materials associated with construction and restoration activities in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure WQ-1 – Best management practices to reduce potential impacts to water quality due to pre-construction, dam removal, and restoration-related activities*. (as described under Potential Impact 3.2-4)
- *FERC Staff Modification, Bullet 2 – Develop, in consultation with appropriate California agencies and Tribes, an erosion and sediment control plan that identifies erosion and sediment control best management practices (BMPs) to minimize pollution from sediment erosion caused by facilities removal and restoration activities that would take place in California.* (EIS, page 2-73)
- *Mitigation Measure TER-1 – Establish a 20-foot buffer around non-reservoir dependent, delineated wetlands*. (as described under Potential Impact 3.5-1)
- *Mitigation Measure HZ-1 – Hazardous Materials Management*. (as described under Potential Impact 3.21-1)
- *FERC Staff Modification, Bullet 5 – Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan. (EIS, page 2-73)*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 7 – *Remaining Facilities*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- *Condition 14 – Restoration*
- Condition 19 – *Recreation Facilities*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-16 Short-term impacts to aquatic biota from herbicide application during restoration of the reservoir areas.

- *No significant impact with mitigation*

EIR Mitigation

- *Mitigation Measure WQ-4 – Herbicide Characteristics and Application Approach*. (as described under Potential Impact 3.2-16)

Applicable Water Quality Certification Conditions

- Condition 9 – *Aquatic Vegetation Management*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-17 Short-term and long-term influence of changes in Iron Gate[3] and Fall Creek hatchery production on Klamath River and Fall Creek water quality.

- *Significant and unavoidable* in the short term for water temperature and dissolved oxygen in Fall Creek downstream of Fall Creek Hatchery
- *No significant impact* in the long term for water quality (except water temperature and dissolved oxygen) in Fall Creek downstream of Fall Creek Hatchery

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 6 – *Aquatic Resources*
- Condition 13 – *Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.2-18 Impacts on water quality from construction activities on Parcel B lands.

- *No significant impact with mitigation* in the short term or long term

EIR and EIS Mitigation

- *Mitigation Measure WQ-1 – Best management practices to reduce potential impacts to water quality due to pre-construction, dam removal, and restoration-related activities*. (as described under Potential Impact 3.2-4)
- *FERC Staff Modification, Bullet 2 – Develop, in consultation with appropriate California agencies and Tribes, an erosion and sediment control plan that identifies erosion and sediment control best management practices (BMPs) to minimize pollution from sediment erosion caused by facilities removal and restoration activities that would take place in California.* (EIS, page 2-73)
- *Mitigation Measure TER-1 – Establish a 20-foot buffer around non-reservoir dependent, delineated wetlands*. (as described under Potential Impact 3.5-1)
- *Mitigation Measure HZ-1 – Hazardous Materials Management*. (as described under Potential Impact 3.21-1)

Applicable Water Quality Certification Conditions

- Condition 7 – *Remaining Facilities*

[3] Iron Gate Hatchery is no longer part of the Proposed Project. As such, mitigation measures related to Iron Gate Hatchery are no longer required and have been removed from the Amended MMRP.

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 14 – *Restoration*
- Condition 19 – *Recreation Facilities*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

2.2 Aquatic Resources

Potential Impact 3.3-1, and EIS page 3-378: Effects on coho salmon critical habitat quality and quantity due to short-term sediment releases and long-term changes in habitat quality and quantity due to dam removal.

- *Significant and unavoidable with mitigation* to coho salmon critical habitat in the short term
- *Beneficial* for coho salmon critical habitat in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-2 Effects on Southern Resident Killer Whale critical habitat quality due to short-term and long-term alterations to salmon populations due to dam removal.

- *No significant impact* to Southern Resident Killer Whale critical habitat in the short term
- *No significant impact* to Southern Resident Killer Whale critical habitat in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*

- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-3, and EIS pages 3-381 to 3-383: Effects on eulachon critical habitat quality due to short-term sediment releases due to dam removal.

- *Significant impact* to eulachon critical habitat in the short term
- *No significant impact* to eulachon critical habitat in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-4 Effects on Chinook and coho salmon Essential Fish Habitat (EFH) quality and quantity due to short-term sediment releases and long-term changes in habitat quality and quantity due to dam removal, and EIS, page 3-247.

- *Significant and unavoidable with mitigation* to Chinook and coho salmon EFH in the short term
- *Beneficial* for Chinook and coho salmon EFH in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

EIS Section 3.4.3.3, Fall-run Chinook salmon migration and spawning lifestages in the mainstem Klamath River

- *Significant and unavoidable with mitigation in the short term.*
- *Beneficial* in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

EIS Section 3.4.3.8, Effects of Changes in Hatchery Operations

- *Significant and unavoidable with mitigation in the short term.*
- *Beneficial* in the long term

EIS Mitigation

- *Hatcheries Management and Operations Plan (Condition 13)NMFS Biological Opinion, Reasonable and Prudent Measure No. 6*
- *CDFW Coordination and Reporting*

Applicable Water Quality Certification Conditions

- Condition 13 – *Hatcheries*

EIS, page 3-225 Spring-run Chinook salmon migration lifestage in the mainstem Klamath River

- *Significant and unavoidable with mitigation in the short term.*
- *Beneficial* in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*

- Condition 23 – *Consultation Requirements*

EIS, page 3-227 coho salmon migration, spawning, and rearing lifestages in the mainstem Klamath River

- *Significant and unavoidable with mitigation in the short term.*
- *Beneficial* in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

EIS, page 3-229 steelhead migration lifestage in the mainstem Klamath River

- *Significant and unavoidable with mitigation in the short term.*
- *Beneficial* in the long term

EIR Mitigation

- *Mitigation Measure AQR-1 − Mainstem Spawning.* (as described under Potential Impact 3.3-1)
- *Mitigation Measure AQR-2 − Juvenile Outmigration.* (as described under Potential Impact 3.3-1)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-5 Effects on groundfish Essential Fish Habitat (EFH) quality due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *No significant impact* to groundfish EFH in the short term
- *No significant impact* to groundfish EFH in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-6 Effects on pelagic fish Essential Fish Habitat (EFH) quality due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *No significant impact* to pelagic fish EFH in the short term
- *No significant impact* to pelagic fish EFH in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-7 Effects on the fall-run Chinook salmon population due to short-term sediment releases and long-term changes in habitat quality, habitat quantity, and hatchery operations due to dam removal.

- *No significant impact* for fall-run Chinook salmon populations in the short term
- *Beneficial* for fall-run Chinook salmon populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-8 Effects on the spring-run Chinook salmon population due to short-term sediment releases and long-term changes in habitat quality, habitat quantity, and hatchery operations due to dam removal.

- *No significant impact* for spring-run Chinook salmon populations in the short term
- *Beneficial* for spring-run Chinook salmon populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-9 Effects on coho salmon populations due to short-term sediment releases and long-term changes in habitat quality, habitat quantity, and hatchery operations due to dam removal.

- *No significant impact* for coho salmon populations in the short term
- *Beneficial* for coho salmon populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-10 Effects on the steelhead population due to short-term sediment releases and long-term changes in habitat quality, habitat quantity, and hatchery operations due to dam removal.

- *No significant impact* for steelhead populations in the short term
- *Beneficial* for steelhead populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-11 Effects on the Pacific lamprey population due to short-term sediment releases and long-term changes in habitat quality and quantity due to dam removal, EIS page 3-229.

- *No significant impact* for Pacific lamprey populations in the short term
- *Beneficial* for Pacific lamprey populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-12 Effects on the green sturgeon population due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *No significant impact* for green sturgeon populations in the short term
- *No significant impact* for green sturgeon populations in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-13 Effects on Lost River and shortnose sucker populations due to short- and long-term changes in habitat quality and quantity due to dam removal and *EIS 3-385*.

Significant and unavoidable with mitigation for Lost River and shortnose sucker populations

EIR and EIS Mitigation

- *Mitigation Measure AR-6 – Adaptive Management Plan – Suckers (now incorporated into the Aquatic Resources Management Plan, and as described under EIR Potential Impact 3.3-13 and FERC EIS page 3-384)*

Applicable Water Quality Certification Conditions

- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-14 Effects on the redband trout population due to short-term sediment releases and long-term changes in habitat quality and quantity due to dam removal.

- *No significant impact* for redband trout population in the short term
- *Beneficial* for redband trout population in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-16 Effects on the longfin smelt population due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *No significant impact* for longfin smelt population in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-17 Effects on species interactions between introduced resident fish species and native aquatic species due to short- and long-term changes in habitat quality and quantity due to dam removal.

- *Beneficial* for the effects of introduced resident fish species on aquatic species in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 6 – *Aquatic Resources*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-18 Effects on aquatic species from interactions among fish species due to short- and long-term changes in habitat quantity due to dam removal.

- *No significant impact* for effects to aquatic species from interactions among fish species in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*

- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-19 Effects on freshwater mollusks populations (Anodonta spp in EIR, and freshwater mussels in EIS) due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *Significant impact* for *M. falcata* and *G. angulata* in the short term
- *No significant impact* for *M. falcata* and *G. angulata* in the long term
- *Significant and unavoidable* impact for *Anodonta spp.* in the short and long term
- *No significant impact* for freshwater clams in the short
- No significant impact to freshwater clams in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-20 Effects on fish species from alterations to benthic macroinvertebrates due to short-term sediment releases and long-term changes in habitat quality due to dam removal.

- *No significant impact* for effects of alterations to benthic macroinvertebrates on fish species in the short term
- *Beneficial* for effects of alterations to benthic macroinvertebrates on fish species in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-21 Effects on aquatic resources due to short-term noise disturbance and water quality alterations from construction and deconstruction activities.

- *No significant impact* for aquatic resources from deconstruction in the short term or long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*

- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-22 Effects on aquatic species due to short-term noise disturbance and water quality alterations from deconstruction activities and long-term fish screen upgrades from the relocation of the City of Yreka Water Supply Pipeline under the Proposed Project.

- *No significant impact* to aquatic resources from the relocation of the City of Yreka water supply pipeline and intake screens in the short or long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.3-23 Effects on anadromous salmonid populations due to short-term and long-term Bogus Creek flow diversions for the Iron Gate Hatchery.[4]

Potential Impact 3.3-24 Effects on anadromous salmonid populations due to short-term and long-term Fall Creek flow diversions for the Fall Creek Hatchery.

- *No significant impact* on Chinook salmon, coho salmon, or steelhead in the short term or long term

Applicable Water Quality Certification Conditions

- Condition 5 – *Anadromous Fish Presence*
- Condition 13 – *Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

2.3 Phytoplankton and Periphyton

Potential Impact 3.4-4 Periphyton growth in hydroelectric reach from Copco No. 1 Reservoir to Iron Gate Dam

- *Significant impact in the short and long term from increase in nuisance periphyton*

[4] Iron Gate Hatchery is no longer part of the Proposed Project. As such, mitigation measures related to Iron Gate Hatchery are no longer required and have been removed from the Amended MMRP.

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 23 – *Consultation Requirements*

2.4 Terrestrial Resources

Potential Impact 3.5-1 Construction-related impacts on wetland and riparian vegetation communities.

- No significant impact with mitigation

EIR and EIS Mitigation

- *Mitigation Measure TER-1 Establish a 20-foot buffer around non-reservoir dependent, delineated wetlands*. (as described under Potential Impact 3.5-1 and EIS, page 3-298)
- *Mitigation Measure WQ-1 – Best management practices to reduce potential impacts to water quality due to pre-construction, dam removal, and restoration-related activities*. (as described under Potential Impact 3.2-4)
- *FERC Staff Modification, Bullet 2 – Develop, in consultation with appropriate California agencies and Tribes, an erosion and sediment control plan that identifies erosion and sediment control best management practices (BMPs) to minimize pollution from sediment erosion caused by facilities removal and restoration activities that would take place in California.* (EIS, page 2-73)

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 14 - *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-2 Short-term and long-term impacts on wetland and riparian vegetation communities along existing reservoir shorelines due to reservoir drawdown.

- *Significant and unavoidable impact* in the short term
- *No significant impact* in the long term

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-3 Short-term and long-term impacts on wetland habitat downstream of the Lower Klamath Project dams due to erosion or sediment deposition.

- *Significant and unavoidable* in the short term
- No significant impact in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-4 Effects on riparian habitat downstream of the Lower Klamath Project dams due to short-term and long-term erosion or sediment deposition.

- *Significant and unavoidable impact* in the short term
- *Beneficial* in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-5 Short-term and long-term impacts on native vegetation due to increased invasive plant species establishment.

- *No significant impact* in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-6 Short- and long-term impacts on culturally significant species in riparian and wetland habitats.

- *Significant and unavoidable with mitigation* in the short term
- *No significant impact* in the long term

EIR and EIS Mitigation

- *Mitigation Measure TER-1 – Establish a 20-foot buffer around non-reservoir dependent, delineated wetlands*. (as described under Potential Impact 3.5-1 and EIS, page 3-298)
- *Historic Properties Management Plan – Revegetation to include culturally significant plants.* (as described on EIS, page 3-492)

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*

- Condition 12 – *Hazardous Materials Management*
- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-7 and EIS, page 3-301 Short-term impacts on special-status plants and rare natural communities from construction-related activities.

- *No significant impact* on rare natural communities in the short term
- S*ignificant and unavoidable* impacts on special-status plants in the short term

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-8 and EIS, page 3-301 Short- and long-term impacts on special-status plants from reservoir removal.

- *Significant and unavoidable* in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-10 and EIS, page 3-397 Short-term impacts on special-status mammals (gray wolf) from construction activities.

- *No significant impact with mitigation* for gray wolves in the short term

EIR and EIS Mitigation

- *Mitigation Measure TER-6 − Gray Wolf*. (as described under Potential Impact 3.5-10)
- TWMP − KRRC to coordinate with ODFW's and CDFW's wolf biologists to determine best management measures (EIS, page 3-397)

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-10 and EIS, page 3-308 Short-term impacts on special-status amphibians, reptiles, and mammals (bats and American badger) from construction activities.

- *Significant impact for Western Pond Turtles* in the short term

- S*ignificant and unavoidable impact* for bats and American badger

EIR and EIS Mitigation

- *Mitigation Measure TER-2 − Amphibian and Reptile Management*. (as described under Potential Impact 3.5-10 and EIS pages 3-302 to 3-303)
- *Mitigation Measure TER-3 − Western Pond Turtle Pre-construction Surveys*. (as described under Potential Impact 3.5-10 and EIS, pages 3-302 to 3-303)
- *TMWP − Pre-construction visual surveys conducted by a trained biologist approved by CDFW to identify western pond turtle and other native reptiles and amphibians, and subsequent training of construction teams to identify native reptiles and amphibians and special-status species during construction activities. (as described in EIS, pages 3-302 to 3-303)*

Applicable Water Quality Certification Conditions

- Condition 10 – Construction General Permit Compliance and Water Quality Monitoring and Protection Plans
- Condition 14 – *Restoration*
- Condition 12 – *Hazardous Materials Management*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-11 Short-term impacts on nesting birds from construction-related noise and nesting habitat alterations.

- *Significant and unavoidable with mitigation* in the short term and long term

EIR and EIS Mitigation

- *EIS, page 2-37 – Preconstruction Visual Estimation Surveys (VES) for native nesting birds within a week of planned habitat disturbance.* (as described in EIS, pages 2-37 to 2-38)
- *EIS page 3-38 – Seven measures including managing vegetation removal, managing osprey nesting, monitoring bird stress, and altering construction timing.* (as described in EIS, page 2-38)
- *FERC Staff Modification, Bullet 8 – Modify the California and Oregon TWMPs to extend the survey area for bird nest visual encounter surveys to include a 250-foot buffer of the disturbance area for non-eagle raptor nests and a 50-foot buffer of the disturbance area for nests of all other bird species.* (as described in EIS, page 2-74)

EIS, page 3-304 -3-305 Special Status Species from loss of the reservoirs

- *Significant and unavoidable impact* with mitigation
- *Permanent, significant, and unavoidable adverse effect* – Removal of the reservoirs would reduce habitat for species that prefer reservoir habitats

EIS Mitigation

- *Mitigation Measure TER-4 Western Pond Turtle Rescue After Reservoir Drawdown Operations*. (as described under Potential Impact 3.5-22 and EIS, pages 2-36, 2-37, and 2-42)

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-12 Short-term impacts on willow flycatcher from construction-related noise and short-term habitat alterations.

- *Significant and unavoidable with mitigation* in the short term

EIR and EIS Mitigation

- *EIS, page 2-37 – Preconstruction Visual Estimation Surveys (VES) for native nesting birds within a week of planned habitat disturbance.* (as described in EIS, pages 2-37 to 2-38)
- *EIS, page 2-38 – Seven measures including managing vegetation removal, managing osprey nesting, monitoring bird stress, and altering construction timing.* (as described in EIS, page 2-38)
- *FERC Staff Modification, Bullet 8 – Modify the California and Oregon TWMPs to extend the survey area for bird nest visual encounter surveys to include a 250-foot buffer of the disturbance area for non-eagle raptor nests and a 50-foot buffer of the disturbance area for nests of all other bird species.* (as described in EIS, page 2-74)
- *EIS, page 2-42 – Monthly reporting on willow flycatcher survey methods and results.* (as described in EIS, page 2-42)
- *TWMP – Second-year measures including surveys, avoiding construction during nesting period, and construction crew training.* (as described in August 2022 TWMP)

Potential Impact 3.5-13 and EIS, page 3-305 Short-term impacts on bald and golden eagles from construction-related noise and habitat alterations.

- *Significant impact with mitigation* for bald and golden eagles in the short term

EIR and EIS Mitigation

- *Mitigation Measure TER-7 − Bald and Golden Eagle*. (as described under Potential Impact 3.5-13 and amended following EIS, pages 2-41, 3-304-305)

Applicable Water Quality Certification Conditions

- Condition 17 – Bald and Golden Eagle Management

Potential Impact EIS 4-15 (table) page 3-304 -3-305 Long-term impacts on bald and golden eagles from loss of the reservoirs and reduced foraging areas for bald eagles.

- *Significant and unavoidable impact* with mitigation in the long term
- *Significant beneficial impact* from restored salmon runs and restoration of the reservoir footprints to open grasslands and shrublands

EIR Mitigation

- *Mitigation Measure TER-7 − Bald and Golden Eagle*. (as described under Potential Impact 3.5-13 and amended following EIS, pages 2-41, 3-304-305)

Applicable Water Quality Certification Conditions

- Condition 17 – *Bald and Golden Eagle Management*

Potential Impact 3.5-13 and EIS, page 3-305 Short-term impacts on bald and golden eagles from construction-related noise and habitat alterations.

- *Significant impact with mitigation* for bald and golden eagles in the short term

EIR and EIS Mitigation

- *Mitigation Measure TER-7 − Bald and Golden Eagle*. (as described under Potential Impact 3.5-13 and amended following EIS pages 2-41, 3-304-305)

Applicable Water Quality Certification Conditions

- Condition 17 – *Bald and Golden Eagle Management*

Potential Impact 3.5-14 and EIS, page 3-313 Short- and long-term impacts on bats from construction noise and loss of roosting habitat.

- *Significant impact with mitigation* in the short term
- *No significant impact with mitigation* in the long term

EIS Mitigation

- *EIS, page 3-390 – Long-term effects would be mitigated by creating or enhancing artificial roosting habitat and using bat gates to continue to provide access to tunnels and conveyances to maternity, roosting, and hibernating sites.* (as described in EIS, page 3-390)
- *FERC Staff Modification, Bullet 9 and adopted into TWMP by October 10th letter from KRRC– Modify the California and Oregon TWMPs to specify that the preferred time frame for the removal of structures that provide roosting habitat for bats is September 1 to March 31, as recommended by FWS, rather than the proposed dates of September 31 to April 15, and comply with FWS's recommendations for roost structure removal if*

necessary between April 1 and August 31.(as described in EIS, page 2-74)

EIS, pages 4-15 (table), and pages 3-304 to 3-305 Short-term effects from removal of facility structures and deconstruction-related activities on roosting, hibernating, and maternity sites of Little Brown Bat.

- *Significant with mitigation* in the short term
- *No significant impact with mitigation* in the long term

EIS Mitigation

- *EIS, page 3-390 – Long-term effects would be mitigated by creating or enhancing artificial roosting habitat and using bat gates to continue to provide access to tunnels and conveyances to maternity, roosting, and hibernating sites.* (as described in EIS, page 3-390)
- *FERC Staff Modification, Bullet 9 and adopted into TWMP by October 10th letter from KRRC– Modify the California and Oregon TWMPs to specify that the preferred time frame for the removal of structures that provide roosting habitat for bats is September 1 to March 31, as recommended by FWS, rather than the proposed dates of September 31 to April 15, and comply with FWS's recommendations for roost structure removal if necessary between April 1 and August 31.(as described in EIS, page 2-74)*

Potential Impact 3.5-16 Effects on special-status amphibians (Foothill yellow-legged frog egg masses) in riverine habitats from short-term high suspended sediment concentrations (SSCs) and flows and long-term changes in water quality.

- *Significant and unavoidable impact for individual foothill yellow-legged frog egg masses, if present*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-17 and EIS, pages 2-231 to 2-232 Effects on benthic macroinvertebrates from short-term dewatering and sedimentation and long-term alterations to habitat.

- *Significant impact* in the short term
- *Beneficial* in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-18 Short-term impacts on amphibian and reptile in riverine habitats from sedimentation.

- *No significant impact* in the short term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-20 Short- and long-term impacts on western pond turtle and amphibians from reduced BMI populations.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-22 and EIS, page 3-396 Short-term and long-term impacts on western pond turtle from loss of aquatic habitat.

- *Significant impac*t w*ith mitigation* in the short term
- *No significant impact* in the long term with mitigation

EIR Mitigation

- *Mitigation Measure TER-4 Western Pond Turtle Rescue After Reservoir Drawdown Operations*. (as described under Potential Impact 3.5-22 and EIS, pages 2-36, 2-37, and 2-42).

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-24 Effects on terrestrial species from herbicide use during reservoir restoration activities.

- *No significant impacts* in the short term on special-status plants and wildlife
- *Beneficial* in the long term for rare natural communities, wetlands, and riparian vegetation

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*

- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-25 Effects on wildlife from increased habitat for salmonids and changes in hatchery production.

- *Beneficial*

Applicable Water Quality Certification Conditions

- Condition 13 – *Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-26 Impacts on special-status wildlife from Bogus Creek[5] flow diversions.

Potential Impact 3.5-27 Impacts on special-status wildlife from Fall Creek flow diversions.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 13 – *Hatcheries*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.5-28 Impacts on sensitive habitats and special-status terrestrial wildlife and plant species from construction activities on Parcel B lands.

- *Significant and unavoidable* in the short term
- *Beneficial* in the long term

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

2.5 Flood Hydrology

Potential Impact 3.6-1 Reservoir drawdown and dam removal could result in short-term increases in downstream surface water flows and result in

[5] Iron Gate Hatchery and associated diversions from Bogus Creek are no longer part of the Proposed Project. As such, mitigation measures related to Iron Gate Hatchery and Bogus Creek diversions are no longer required and have been removed from the Amended MMRP.

exposing people and/or structures to a substantial risk of damage, loss, injury, or death involving flooding.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Potential Impact 3.6-2 Under the Proposed Project recreational facilities currently located on the banks of the existing reservoirs would be removed following drawdown and could change flood hydrology.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 19 – *Recreation Facilities*
- Condition 23 – *Consultation Requirements*

2.6 Groundwater

Potential Impact 3.7-1 Groundwater levels in existing wells adjacent to the reservoirs could decline in response to the decrease in reservoir surface-water elevations if the dams, and therefore reservoirs, are removed.

- *Less than significant impact*

Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

2.7 Water Supply/Water Rights

Potential Impact 3.8-1 Dam removal could change the amount of surface water flow available for diversion under existing water rights in the mainstem Klamath River within the Hydroelectric Reach and downstream from Iron Gate Dam.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 13 – *Hatcheries*
- Condition 15 – *Water Supply Monitoring and Management*
- Condition 21 – *Water Rights Modification*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.8-3 Release of stored sediment during reservoir drawdown could change Klamath River geomorphology and affect water intake pumps downstream from Iron Gate Dam.

- *Less than significant impact with mitigation*

EIR Mitigation

- *Mitigation Measure WSWR-1 − Water Supply Monitoring and Management*. (as described under Potential Impact 3.8-3)

Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.8-4 Relocation of the City of Yreka water supply pipeline after drawdown of Iron Gate Reservoir could affect water supply.

- *Less than significant impact with mitigation*

EIR Mitigation

- *Mitigation Measure WSWR-2 − City of Yreka Water Supply.* (as described under Potential Impact 3.8-4)

Applicable Water Quality Certification Conditions

- Condition 8 – *Public Drinking Water Supplies*

Potential Impact 3.8-5 Removal and potential replacement of recreational facilities currently located on the banks of the existing reservoirs could affect water supply and/or water rights.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 19 – *Recreation Facilities*
- Condition 23 – *Consultation Requirements*

2.8 Air Quality Potential Impacts

Potential Impact 3.9-1 and EIS, page 3-572 Exceedance of the Siskiyou County Air Pollution Control District (SCAPCD) emissions thresholds in Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants).

- *Significant and unavoidable impact with mitigation for NO_X emissions*
- *No significant impact with mitigation for PM_{10} emissions*
- *No significant impact for ROG, CO, SO_2, and $PM_{2.5}$ emissions*

EIR and EIS Mitigation

- *Mitigation Measure AQ-1 – Off-Road Construction Equipment Engine Tier*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-2 – On-Road Construction Equipment Engine Model Year*. (as described under Potential Impact 3.9-1)
- M*itigation Measure AQ-3 – Heavy-Duty Trucks Engine Model Year*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-4 – Blasting-related Dust Control Measures*. (as described under Potential Impact 3.9-1)

- *Mitigation Measure AQ-5 – General Construction Dust Control Measures*. (as described under Potential Impact 3.9-1)
- *FERC Staff Recommendation, Bullet 1 – Modify the Construction Management Plan to require that KRRC give preference to contractors using prescribed equipment that meets or exceeds EPA's exhaust emission standards for model year 2010 and newer heavy-duty on highway compression-ignition engines.* (EIS, page 2-73)

The State Water Board has requested that FERC require at a minimum the following monitoring and reporting requirements for the following air quality mitigation measures:

Mitigation Measures AQ-1, AQ-2, AQ-3: Submission of construction contract terms requiring use of engines that comply with Mitigation Measures AQ-1, AQ-2 and AQ-3 prior to start of construction. Submittal of a signed statement after construction disclosing whether off-road diesel engines met Tier 4 requirements, or Tier 3 requirements with appropriate documentation that Tier 4 equipment was not available. Submittal of a signed statement after construction that on-road construction equipment and heavy-duty trucks met model year 2010 or later emissions standards (consistent with FERC Staff Modification, Bullet 1 listed above).

Mitigation Measure AQ-4: Submittal of construction contract terms, pre-dam demolition, requiring compliance with Mitigation Measure AQ-4; a pre-dam-demolition blasting plan describing how dust control measures will be implemented; and a report on implementation of the plan after dam removal.

Mitigation Measure AQ-5: Submission of construction contract terms requiring compliance with Mitigation Measure AQ-5 dust control measures. Submittal of a signed statement after construction regarding implementation of dust control measures.

Potential Impact 3.9-2 and EIS, page 3-575 Substantially conflict with or obstruct implementation of the California Regional Haze Plan.

- *No significant impact with mitigation in the short-term*
- *No significant impact in the long-term*

EIR Mitigation

- *Mitigation Measure AQ-1 – Off-Road Construction Equipment Engine Tier*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-2 – On-Road Construction Equipment Engine Model Year*. (as described under Potential Impact 3.9-1)
- M*itigation Measure AQ-3 – Heavy-Duty Trucks Engine Model Year*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-4 – Blasting-related Dust Control Measures*. (as described under Potential Impact 3.9-1)

- *Mitigation Measure AQ-5 – General Construction Dust Control Measures*. (as described under Potential Impact 3.9-1)

The State Water Board has requested that FERC require monitoring and reporting requirements for the air quality mitigation measures as described above in Potential Impact 3.9-1.

Potential Impact 3.9-4 Short-term exposure of sensitive receptors to substantial toxic air contaminant concentrations.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure HZ-1 − Hazardous Materials Management*. (as described under Potential Impact 3.21-1)
- FERC Staff Modification, Bullet 5 – Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan. (EIS, page 2-73)

Applicable Water Quality Certification Conditions

- Condition 12 – *Hazardous Materials Management*

2.9 Greenhouse Gas Emissions and Energy Potential Impacts

Potential Impact 3.10-1 and EIS, page 3-581 Generation of direct greenhouse gas emissions (GHG) emissions from construction activity and operations.

- *No significant impact with mitigation for GHG emissions from construction activities*
- *No significant impact from operation of the hatchery following dam removal for eight years*

EIR Mitigation

- *Mitigation Measure ENR-1 – Purchase of Carbon Offsets*. (as described under Potential Impact 3.10-1)

The State Water Board has requested that FERC require, at a minimum, the following reporting requirements for the greenhouse gas and energy mitigation measure:

Mitigation Measure ENR-1: Submittal of pre-dam-demolition contract terms requiring compliance with Mitigation Measure ENR-1 prior to any construction activities. Submittal of documentation of purchase and retirement of carbon offsets for the estimated 20,128 metric tons of carbon dioxide equivalent ($MTCO_2e$) of construction greenhouse gas emissions that will be generated by the Proposed Project.

2.10 Geology, Soils, And Mineral Resources Potential Impacts

Potential Impact 3.11-2 Soil disturbance associated with heavy vehicle use, excavation, and grading could result in erosion during removal activities.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*

Potential Impact 3.11-3 and EIS, pages 3-11 to 3-12 Reservoir drawdown could result in hillslope instability in reservoir rim areas.

- *No significant impact* at Iron Gate Reservoir and J.C. Boyle Reservoir
- *No significant impact with mitigation* for areas containing diatomaceous deposits along the rim and below the Copco No. 1 Reservoir water level in the short term

EIR and EIS Mitigation

- *Mitigation Measure GEO-1 − Slope Stabilization*. (as described under Potential Impact 3.11-3 and modified in EIS, pages 3-9 through 3-10).

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- Condition 18 – *Slope Stability*

Potential Impact 3.11-4 Reservoir drawdown could result in short-term instability of embankments at the earthen dams (Iron Gate and J.C. Boyle).

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Potential Impact 3.11-5 and EIS, pages 3-17 to 3-19 Reservoir drawdown could result in substantial short-term sediment deposition in the Klamath River downstream of Iron Gate Dam due to erosion of reservoir sediment deposits and a long-term change in sediment supply and transport due to dam removal.

- *Significant and unavoidable* in Middle Klamath River from Iron Gate Dam to Cottonwood Creek
- *Significant and unavoidable* in the Middle Klamath River downstream of Cottonwood Creek, Lower Klamath River, and Klamath River Estuary in the short term
- *Beneficial* for Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary in the long term
- *No significant impact* in Pacific Ocean nearshore environment in the short term and long term.

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 3 – *Reservoir Drawdown*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.11-6 Reservoir drawdown could result in increased bank erosion in the Klamath River downstream of Iron Gate Dam.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 3 – Reservoir Drawdown

2.11 Historical Resources and Tribal Cultural Resources

Potential Impact 3.12-1 Pre-dam-removal activities that involve disturbance of the landscape, including construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and improvements could result in potential exposure of or damage to known Tribal Cultural Resources through ground-disturbing construction and disposal activity and increased access to sensitive areas.

- *Significant and unavoidable with mitigation*

EIR and EIS Mitigation

- Mitig*ation Measure TCR [Tribal Cultural Resource]-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1) and included in HPMP)
- *Mitigation Measure TCR-4 − Endowment for Post-Project Implementation*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require, at a minimum, the following monitoring and reporting requirements for the tribal cultural resources mitigation measures:

Historical and Tribal Cultural Resources Mitigation Measures TCR-1, TCR-3, and TCR-4: TCR-1 requires the licensee to submit a Historic Properties Management Plan (HPMP), which will include a Tribal Cultural Resources Management Program (TCRMP) meeting specifications in TCR-1, to FERC for approval. TCR-3 and TCR-4 further specify that the TCRMP shall include

an Inadvertent Discovery Plan (IDP) meeting the specifications in TCR-3 and an endowment for post-project implementation, as described in TCR-4. Additionally, the State Water Board requests that FERC require pre-construction submittal of construction contract terms requiring compliance with the construction-related requirements of the HPMP, TCRMP, and IDP. To the extent the HPMP, TCRMP, and IDP requirements are not addressed in the construction contract, submittal of other contract(s)'s terms demonstrating appropriate terms to comply with the requirements of the HPMP (e.g., any separate contracts to provide required training for field personnel and contracts hiring tribal monitors). Submittal of reports summarizing activities undertaken in compliance with the HPMP and TCRMP, including on creation of the endowment – annually or on a different basis – specified in the HPMP or TCRMP. Submittal of reports summarizing activities undertaken in compliance with the IDP based on the frequency of monitoring specified in the IDP (at least quarterly). Please note that Mitigation Measure TCR-1 and FERC Staff Modification, Bullet 11 have been implemented.

Historical and Tribal Cultural Resources Mitigation Measure TCR-2: Submittal of Looting and Vandalism Prevention Program (LVPP) to FERC prior to initiation of construction activities. Pre-construction submittal of relevant construction and training contract terms requiring compliance with the construction-related requirements of TCR-2. During the first three years of Proposed Project activities or until the transfer of Parcel B lands, submittal of reports summarizing activities undertaken in compliance with Mitigation Measure TCR-2 with a frequency based on the monitoring frequency specified in the LVPP (at least quarterly). Prior to transfer of Parcel B lands, submittal of transfer terms requiring an assignment of continuing responsibilities for relevant LVPP measures by the transferee.

Potential Impact 3.12-2 Drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs could result in shifting, erosion, and exposure of known or unknown, previously submerged Tribal Cultural Resources.

- *Significant and unavoidable with mitigation*

EIR and EIS Mitigation

- Mitig*ation Measure TCR [Tribal Cultural Resource]-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-4 − Endowment for Post-Project Implementation*. (as described under Potential Impact 3.12-1 and included in HPMP)

- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12-1.

Potential Impact 3.12-3 Reservoir drawdown could result in short-term erosion or flood disturbance to tribal cultural resources located along the Klamath River.

- *No significant impact* in the short term or long term for the Hydroelectric Reach between J.C. Boyle Dam and Copco No. 1 Reservoir
- *Significant and unavoidable with mitigation* in the short term and long term for the Middle Klamath River from Iron Gate Dam to Humbug Creek
- *No significant impact* in the short term or long term for Middle Klamath River downstream of Humbug Creek and Lower Klamath River excluding the Yurok Reservation (approximately RM 0 to RM 45)
- *No significant impact with mitigation* on the Yurok Reservation (approximately RM 0 to RM 45) along Lower Klamath River and Klamath River Estuary

EIR and EIS Mitigation

- *Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-5 − Implementation on Yurok Reservation*. (as described under Potential Impact 3.12-3)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1. Additionally, the State Water Board has requested that FERC require, at a minimum, the following monitoring and reporting requirements for the tribal cultural resources mitigation measure:

Historical and Tribal Cultural Resources Mitigation Measure TCR-5: Submittal of reports summarizing any activities undertaken in compliance with the Yurok Tribe's Cultural Resource Ordinance and Inadvertent Discovery Policy – annually, or on a different basis if specified by the Yurok Tribe.

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Potential Impact 3.12-4 Project activities associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams could result in physical disturbance to known or unknown tribal cultural resources from blasting or other removal techniques.

- *Significant and unavoidable with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-4 − Endowment for Post-Project Implementation*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Potential Impact 3.12-5 Ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration could physically disturb known Tribal Cultural Resources. Additionally, ongoing road and recreation site maintenance has the potential to disturb known Tribal Cultural Resources.

- *Significant and unavoidable with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)

- *Mitigation Measure TCR-4 − Endowment for Post-Project Implementation*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Potential Impact 3.12-6 During and following reservoir drawdown activities at Iron Gate, Copco No. 1, and Copco No. 2 reservoirs there is an increased potential for looting of Tribal Cultural Resources (short-term and long-term).

- *Significant and unavoidable with mitigation* in the short term and long term

EIR and EIS Mitigation

- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-4 − Endowment for Post-Project Implementation*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Potential Impact 3.12-7 Short-term erosion caused by high-intensity and/or duration precipitation events could cause exposure of or disturbance to known or unknown tribal cultural resources within the reservoir footprints immediately following reservoir drawdown and prior to vegetation establishment/full stabilization of sediment deposits.

- *Significant and unavoidable with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)

- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.12-8 Long-term (post-removal) impacts to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources.

- *Significant and unavoidable with mitigation* prior to land transfer
- *Significant and unavoidable with mitigation* after land transfer

EIR and EIS Mitigation

- *Mitigation Measure TCR-1 − Develop and Implement a Tribal Cultural Resources Management Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1
- Mitig*ation Measure TCR-6 − Land Transfer*. (as described under Potential Impact 3.12-8 and included in HPMP)
- *Mitigation Measure TCR-7 − Proposal for Land Easement and Transfer Stipulations*. (as described under Potential Impact 3.12-8
- *Mitigation Measure TCR-8 − Off-site Land Transfer*. (as described under Potential Impact 3.12-8
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require, at a minimum, the following monitoring and reporting requirements for the tribal cultural resources mitigation measures:

Historical and Tribal Cultural Resources Mitigation Measure TCR-6 through TCR- 8: Submittal of quarterly reports describing actions in the process required by Section 7.6.4 of the Klamath Hydroelectric Settlement Agreement as related to TCR-6 and TCR-7, and submittal of a final report including relevant requirements in Parcel B land transfers. To the extent that the referenced reports do not already include a discussion of actions taken regarding TCR-8,

submittal of a report describing actions taken pursuant to TCR-8 on an annual basis.

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.12-9 Klamath Cultural Riverscape Contributing Aspect – Combined effects on the Klamath River fishery of dam removal, changes in hatchery production, and increased habitat for salmonids.

- *No significant impact* in the short term
- *Beneficial* in the long term

Applicable Water Quality Certification Conditions

- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 13 – *Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.12-10 Klamath Cultural Riverscape Contributing Aspect: Ability of tribes to use the Middle and Lower Klamath River for ceremonial and other purposes due to alterations in riverine water quality and the extent of nuisance and/or noxious blue-green algae blooms.

- *Beneficial* in the short term and long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.12-12 Pre-dam-removal activities that involve disturbance of the landscape, including construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and improvements could result in potential exposure of or damage to historic-period archaeological resources (identified in Table 3.12-1) through ground-disturbing construction and disposal activity and increased access to sensitive areas.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Potential Impact 3.12-13 Drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs could shift, erode, or exposure historic-period archaeological resources resulting in increased potential for damage and looting.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)
- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12- and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Potential Impact 3.12-14 Reservoir drawdown could result in short-term erosion or flood disturbance to historic-period cultural resources located along the Klamath River.

- *Significant and unavoidable with mitigation* for Middle Klamath River from Iron Gate Dam (RM 193) to Humbug Creek (RM 174)
- *No significant impact* for Hydroelectric Reach excluding Iron Gate Dam, Middle Klamath River downstream of Humbug Creek, Lower Klamath River, Klamath River Estuary

EIR and EIS Mitigation

- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Potential Impact 3.12-15 Project activities associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams could result in physical disturbance to historic-period cultural resources from blasting or other removal techniques.

- *Significant and unavoidable impact with mitigation*

EIR Mitigation

- *Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12-1 and included in HPMP)

Potential Impact 3.12-16 Ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration could physically disturb historic-period cultural resources. Additionally, ongoing road and recreation site maintenance may have the potential to disturb known historic-period cultural resources.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TCR-2 − Develop and Implement a Looting and Vandalism Prevention Program*. (as described under Potential Impact 3.12-1 and included in HPMP)*Mitigation Measure TCR-3 − Develop and Implement Inadvertent Discovery Plan*. (as described under Potential Impact 3.12- and included in HPMP)
- *FERC Staff Modification, Bullet 11* – Modifications to HPMP (as described under EIS, Section 2.2 and included in HPMP)

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

2.12 Public Services

Potential Impact 3.17-1 and EIS, pages 3-457 to 3-458 Increased public services response times for emergency fire, police, and medical services due to construction and demolition activities.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure HZ-1 − Hazardous Materials Management*. (as described under Potential Impact 3.21-1),
- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1 and 3.22-2 and included in EIS, Exhibit B)
- *EIS, page 3-456 – Temporary on-site housing for project workforce to reduce personnel commuting*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.17-2 The Proposed Project's elimination of a long-term water source for wildfire services could substantially increase the response time for suppressing wildfires.

- *Significant and unavoidable impact with mitigation*

EIS Mitigation

- *EIS, page 3-455, Revised Fire Management Plan*
- *FERC Staff Modification, Bullet 13 − Modify the Fire Management Plan to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities.* (EIS, page 2-75)
- *EIS, pages 3-555 and 3-563 − FERC recommends that KRRC engage in specific outreach to identify vulnerable communities on emergency preparedness, including information and solicitation of input on planning, including preparedness, response, recovery, and mitigation.*

The State Water Board will request that FERC require monitoring and reporting requirements for the outreach measures described in FERC Staff Modification, Bullet 13 and EIS, pages 3-555 and 3-563.

Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

2.13 Utilities and Service Systems

Potential Impact 3.18-1 The Proposed Project could result in the construction of new wastewater treatment facilities, or expansion of existing facilities, due to inadequate capacity to serve the Proposed Project's anticipated demand, and the construction of such facilities could cause significant environmental impacts.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*

Potential Impact 3.18-2 The Proposed Project could require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*

Potential Impact 3.18-3 The Proposed Project could exceed permitted landfill capacity to accommodate the project's solid waste disposal needs.

Potential Impact 3.18-4 The Proposed Project could violate applicable statutes and regulations related to solid waste.
In the EIR, Potential Impacts 3.18-3 and 3.18-4 are assessed together.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 11 – *Waste Disposal*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

2.14 Aesthetics

Potential Impact 3.19-2 Effects of Changes in Flows and Channel Morphology on Scenic River Vistas.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- *Condition 6 – Aquatic Resources*

Potential Impact 3.19-3 Changes in Visual Water Quality.

- *No significant impact* from short-term (temporary) changes in water quality including increased turbidity and reduced clarity
- *Beneficial* due to long-term changes in visual water quality from reduced algal blooms

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.19-4 and EIS, page 3-465 Visual changes resulting from reservoir drawdown and restoration including temporarily bare/ unvegetated banks.

- *Significant and unavoidable impact* for up to five years, until vegetation is re-established, due to reservoir drawdown
- *Significant and unavoidable impact* in the long term due to reservoir drawdown

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- *Condition 14 – Restoration*

Potential Impact 3.19-5 Long-term (permanent) visual changes resulting from the removal of Lower Klamath Project dam complexes, improvements to or construction of new roads, culverts, bridges, water supply infrastructure, and removal or replacement of recreational facilities.

- *No significant impact* in the long term (permanent) due to removal of the Lower Klamath Project dam complexes and/or hatchery modifications
- *No significant impact* in the long term (permanent) due to improvements to or construction of new roads, bridges, and culverts and water supply infrastructure
- *No significant impact* in the long term (permanent) due to removal of recreational facilities

Applicable Water Quality Certification Conditions

- Condition 7 – *Remaining Facilities*
- *Condition 8 – Public Drinking Water Supplies*
- Condition 19 – *Recreation Facilities*

2.15 Recreation

Potential Impact 3.20-1 and EIS, page 4-325 Effects on existing recreational facilities and opportunities due to access restrictions, noise, dust, and/or sediment release resulting from construction activities.

- *Significant impact in the short term from temporary loss of access*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 19 – *Recreation Facilities*

Potential Impact 3.20-2 and EIS, page 3-422 to 3-423 Long-term adverse changes to or loss of reservoir-based recreation activities and facilities due to removal of Iron Gate and Copco No. 1 reservoirs.

- *Significant impact in the long term from permanent removal of lake-side recreation sites*
- *Significant and unavoidable impact in the long term from permanent removal of reservoir-based recreation*

Applicable Water Quality Certification Conditions

- Condition 19 – *Recreation Facilities*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.20-3 Significant increase in the use of regional recreational facilities due to loss of Iron Gate and Copco No. 1 reservoirs, such that substantial physical deterioration or acceleration of deterioration of the regional facilities would occur.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 19 – *Recreation Facilities*

Potential Impact 3.20-5 and EIS, page 3-424 Changes to or loss of river conditions that support whitewater boating.

- *No significant impact* for the Middle Klamath River
- *Beneficial impact* in the Copco No. 2 Bypass Reach (within the Hydroelectric Reach)
- *Significant and unavoidable impact* in the Hell's Corner Reach (in the upper portion of the Hydroelectric Reach)

Applicable Water Quality Certification Conditions

- Condition 19 – *Recreation Facilities*

Potential Impact 3.20-6 Changes to or loss of other river-based recreation including fishing.

- *No significant impact* for the Middle Klamath River between Iron Gate Dam (RM 193.1) and Humbug Creek (RM 174.3)
- *Beneficial* for the Hydroelectric Reach, the Middle Klamath River downstream of Humbug Creek (RM 174.3), and the Lower Klamath River

Applicable Water Quality Certification Conditions

- Condition 5 – *Anadromous Fish Presence*

- Condition 6 – *Aquatic Resources*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.20-7 and EIS, page 3-426 Effects on Wild and Scenic River resources, designations, or eligibility for listing.

- *Significant impact* in the short term for the designated California Klamath River wild and scenic river segment.
- *No significant impact* in the short term for the eligible and suitable California Klamath River wild and scenic river section
- *Beneficial* in the long term for the designated California Klamath River wild and scenic river segment.
- *Beneficial* in the long term for the eligible and suitable California Klamath River wild and scenic river section

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 14 – *Restoration*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

2.16 Hazards and Hazardous Materials

Potential Impact 3.21-1 and EIS, pages 3-363 and 4-27 Proposed construction-related activities could result in substantial exposure to hazardous materials through the routine transport, use, or disposal of hazardous materials.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- Mitigation Measure HZ-1 − Hazardous Materials Management. (as described under Potential Impact 3.21-1,
- *FERC Staff Modification, Bullet 5 – Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan. (EIS, page 2-73)*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.21-2 and EIS, page 3-563 Proposed construction-related activities could result in substantial exposure to hazardous materials through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure HZ-1 − Hazardous Materials Management*. (as described under Potential Impact 3.21-1
- *FERC Staff Modification, Bullet 5 – Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan. (EIS, page 2-73)*
- *FERC Staff Modification, Bullet 13 − Modify the Oregon Traffic Management Plan, California Traffic Management Plan, and Emergency Response Plan (subplans of the Construction Management Plan) and the FMP to include a public outreach component that specifically addresses communication related to emergency planning with environmental justice communities.* (EIS, page 2-75)
- *EIS, pages 3-555 and 3-563 − FERC recommends that KRRC engage in specific outreach to identified vulnerable communities on emergency preparedness, including information and solicitation of input on planning, including preparedness, response, recovery, and mitigation.*

The State Water Board will request that FERC require monitoring and reporting requirements for the outreach measures as described above in FERC Staff Modification Bullet s 5 and 13, and as described under Potential Impact 3.27-2.

Applicable Water Quality Certification Conditions

- Condition 7 – *Remaining Facilities*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.21-3 Proposed construction-related activities could result in substantial exposure to hazardous materials through emissions or handling of substances or waste within one-quarter mile of an existing or proposed school.

- *No significant impact*

Applicable Water Quality Certification Conditions

- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.21-4 The Proposed Project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could result in substantial exposure to hazardous materials.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure HZ-1 − Hazardous Materials Management*. (as described under Potential Impact 3.21-1
- *FERC Staff Modification, Bullet 5 – Consult with Siskiyou County to address concerns raised in its comments on the draft EIS regarding disposal of dam demolition components and incorporate appropriate measures in a revised Waste Disposal and Hazardous Materials Management Plan. (EIS, page 2-73)*

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Potential Impact 3.21-7 and EIS, page 3-457 to 3-458 Proposed construction-related activities could impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *KRRC California Traffic Management Plan (as described in EIS, page 3-456)*
- *KRRC Health and Safety Plan*

The State Water Board will request that FERC require monitoring and reporting requirements for the implementation of MM TR-1 (see Impact 3.22-1), the California Traffic Management Plan, and the Health and Safety Plan.

Potential Impact 3.21-8 Proposed construction-related activities and/or removal of the Lower Klamath Project reservoirs could substantially increase the public's risk of loss, injury, or death associated with wildland fires.

- *No significant impact* in the short term
- *Significant and unavoidable impact* in the long term

EIR and EIS Mitigation

- *KRRC Fire Management Plan*

Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

2.17 Transportation and Traffic

Potential Impact 3.22-1 and EIS, pages 3-457 to 3-458 Proposed construction-related traffic could potentially result in a substantial increase in traffic in excess of the capacity or design of the road improvements or impairs the safety or performance of the circulation system, including transit, roadways, bicycle lanes or pedestrian paths

Significant and unavoidable with mitigation in the short term (temporary)
EIR and EIS Mitigation

- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *EIS, page 3-456 – Temporary on-site housing for project workforce to reduce personnel commuting*
- *KRRC California Traffic Management Plan.* (as described in EIS, page 3-456)

The State Water Board has requested that FERC require, at a minimum, the following monitoring and reporting requirements for the traffic mitigation measure:

Traffic Mitigation Measure TR-1: In addition to submittal of the Traffic Management Plan and the Emergency Response Plan, submittal of construction contract terms demonstrating compliance with these plans prior to any construction activities, and annually (or more frequent period identified in the Traffic and Emergency Management Plan) submittal of a report of implementation during construction, and a final report thereafter.

The State Water Board will request that FERC additionally require monitoring or reporting on the temporary on-site housing of the project workforce and implementation of the California Traffic Management Plan as noted in Impact 3.22-1 above.

Potential Impact 3.22-2 Proposed construction-related traffic could potentially conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways that would result in increased risk of harm to the public.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *KRRC California Traffic Management Plan* (as described in EIS, page 3-456)
- *KRRC Emergency Response Plan*
- *KRRC Health and Safety Plan*

The State Water Board will request that FERC require monitoring or reporting for implementation of the California Traffic Management Plan, Emergency Response Plan, and Health and Safety Plan, as noted in Impact 3.22-2 above.

Potential Impact 3.22-3 Proposed construction-related traffic could result in substantially increasing hazards due to a design feature (e.g., sharp curves or narrow lanes) or incompatible uses (e.g., oversized construction equipment) that would result in an increased risk of harm to the public.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *KRRC California Traffic Management Plan.* (as described in EIS, page 3-456)
- *KRRC Emergency Response Plan*

The State Water Board will request that FERC require monitoring or reporting for implementation of TR-1 (see Impact 3.22-1), the California Traffic Management Plan, and Emergency Response Plan, as noted in Impact 3.22-3 above.

Potential Impact 3.22-4 and EIS, pages 3-457 to 3-458 The Proposed Project could result in inadequate emergency access that would result in harm to the public.

- *Significant and unavoidable impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *KRRC California Traffic Management Plan.* (as described in EIS, page 3-456)
- *KRRC Health and Safety Plan*

The State Water Board will request that FERC require monitoring or reporting for implementation of TR-1 (see Impact 3.22-1), the California Traffic Management Plan, and Health and Safety Plan, as noted in Impact 3.22-4 above.

Potential Impact 3.22-5 Construction-related activities could potentially substantially conflict with public transit, bicycle, or pedestrian facilities, or

otherwise decrease the performance or safety of such facilities resulting in an increased risk of harm to the public.

- *No significant impact with mitigation*

EIR and EIS Mitigation

- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *KRRC California Traffic Management Plan.* (as described in EIS, page 3-456)

The State Water Board will request that FERC require monitoring or reporting for implementation of TR-1 (see Impact 3.22-1) and the California Traffic Management Plan, as noted in Impact 3.22-5 above.

2.18 Noise

Potential Impact 3.23-1 and EIS, pages 3-575 to 3-577 Use of standard construction equipment could exceed Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment.

- *Significant impact*

EIR and EIS Mitigation

- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

The State Water Board will request that FERC require monitoring or reporting for implementation of the Noise and Vibration Control Plan, as noted in Impact 3.23-1 above.

Potential Impact 3.23-2 and EIS, pages 3-575 to 3-577 Construction activities at Copco No. 1 Dam could cause short-term increases in daytime and nighttime noise levels affecting nearby residents.

- *Significant impact*

EIR and EIS Mitigation

- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

The State Water Board will request that FERC require monitoring or reporting for implementation of the Noise and Vibration Control Plan, as noted in Impact 3.23-2 above.

Potential Impact 3.23-4 Construction activities at Iron Gate Dam could cause short-term increases in nighttime noise levels affecting nearby residents.

- *Significant Impact*

EIR Mitigation

- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

The State Water Board will request that FERC require monitoring or reporting for implementation of the Noise and Vibration Control Plan, as noted in Impact 3.23-4 above.

Potential Impact 3.23-5 Reservoir restoration activities at Copco No. 1 and Iron Gate could result in short-term increases in noise levels affecting nearby residents.

- *Significant Impact*

EIR Mitigation

- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

The State Water Board will request that FERC require monitoring or reporting for implementation of the Noise and Vibration Control Plan, as noted in Impact 3.23-5 above.

Potential Impact 3.23-6 and EIS, page 3-576 and lxviii Blasting activities at Copco No. 1, Copco No. 2, and Iron Gate Dams could increase daytime vibration levels affecting nearby residents.

- *Significant Impact*

EIR and EIS Mitigation

- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

The State Water Board will request that FERC require monitoring or reporting for implementation of the Noise and Vibration Control Plan, as noted in Impact 3.23-6 above.

2.19 Cumulative Effects

Water Quality

Potential Cumulative Impact 3.24-1 Long-term water quality effects of the Proposed Project in combination with restoration, flow enhancement, and water quality improvement projects.

- *Beneficial cumulative effects*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*

- Condition 22 – *Tribal Water Quality Standards*
- *Condition 23 – Consultation Requirements*

Potential Cumulative Impact 3.24-2 and EIS, page 3-602 Short-term increases in suspended sediments under the Proposed Project in combination with the 2017 court-ordered flushing and emergency dilution flows.

- *Cumulatively significant* in the short term
- *No significant cumulative impact* in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-3 Long-term water quality effects of the Proposed Project in combination with forest and wildfire management activities.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-4 Short-term and long-term water quality effects of the Proposed Project in combination with wildfires.

- *Cumulatively considerable* in the short term
- *No significant cumulative impact* in the long term

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 14 – *Restoration*
- Condition 15 – *Water Supply Monitoring and Management*
- Condition 20 – *Limitations on Hydropower Operations*

- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

EIS page 3-604 Short-term reductions in dissolved oxygen in the hydroelectric reach and downstream to approximately Seiad Valley.

- *Cumulatively significant impact in short term*
- *Cumulatively beneficial in long term*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 4 – *Sediment Deposits*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 14 – *Restoration*
- Condition 18 – *Slope Stability*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-5 Long-term water quality effects of the Proposed Project in combination with cannabis cultivation projects.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-6 Long-term water quality effects of the Proposed Project in combination with grazing and other agricultural projects.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-7 Long-term water quality effects of the Proposed Project in combination with mining projects.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-8 Long-term water quality effects of the Proposed Project in combination with stream-crossing infrastructure projects.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- *Condition 8 – Public Drinking Water Supplies*
- Condition 14 – *Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-9 Short-term water quality effects of the Proposed Project in combination with KHSA Interim Measure 16 Water Diversion Project.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 3 – *Reservoir Drawdown*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 22 – *Tribal Water Quality Standards*
- Condition 23 – *Consultation Requirements*

Aquatic Resources

EIS, page 3-606 Cumulative effects associated with suspended sediment in combination with ongoing land uses and poor water quality.

- *Cumulatively significant impact with mitigation* in the short term

Applicable Water Quality Certification Conditions

- *Condition 1 – Water Quality Monitoring and Adaptive Management*
- *Condition 2 – Compliance Schedule*
- *Condition 3- Reservoir Drawdown Plan*
- *Condition 4 – Sediment Deposits*
- *Condition 6 – Aquatic Resources Management Plan*
- *Condition 10 – Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- *Condition 14 – Restoration*
- *Condition 18 – Slope Stability*

EIS, page 3-607 Effects on adult coho and Chinook salmon returning to the Klamath River, in combination with fishing, drought conditions, poor ocean conditions and warm water in the Klamath River.

- *Cumulatively significant* in the short term

Applicable Water Quality Certification Conditions

- *Condition 5 – Anadromous Fish Presence*
- *Condition 6 – Aquatic Resources*
- *Condition 13 – Hatcheries*

Potential Cumulative Impact 3.24-10 Long-term effects on aquatic resources from the Proposed Project in combination with restoration, flow enhancement, and water quality improvement projects.

- *Beneficial cumulative effects*

Applicable Water Quality Certification Conditions

- Condition 1 – Water Quality Monitoring and Adaptive Management
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-11 Effects of short-term increases in suspended sediments on aquatic resources under the Proposed Project in combination with 2017 court-ordered flushing and emergency dilution flows.

- *No significant cumulative impact* in the short term

Applicable Water Quality Certification Conditions

- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- *Condition 13 – Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Terrestrial Resources

EIS, pages 3-618 to 3-619 Effects on archeological sites, historic sites and tribal cultural properties

- *Cumulatively significant with mitigation*

EIR and EIS Mitigation

- *Historic Properties Management Plan*

EIS, page 3-619 Effects on Klamath River Hydroelectric Project Historic District

- *Cumulatively significant with mitigation*

EIR and EIS Mitigation

- *Historic Properties Management Plan*

Potential Cumulative Impact 3.24-23 Long-term effects on terrestrial resources from the Proposed Project in combination with restoration, flow enhancement, and water quality improvement projects.

- *Beneficial cumulative effects*

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-24 Short-term effects on terrestrial resources from the Proposed Project in combination with 2017 court-ordered flushing and emergency dilution flows.

- *No significant cumulative impact* on riparian vegetation or wildlife

Applicable Water Quality Certification Conditions

- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 13 – *Hatcheries*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

Flood Hydrology

Potential Cumulative Impact 3.24-30 Short-term and long-term flood hydrology effects from the Proposed Project in combination with other non-project activities.

- *Beneficial cumulative effects* for the combination of the Proposed Project and riverine restoration
- *No significant cumulative impact* for other non-project activities

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- Condition 19 – *Recreation Facilities*
- Condition 23 – *Consultation Requirements*

Groundwater

Potential Cumulative Impact 3.24-31 Short-term and long-term groundwater effects from the Proposed Project in combination with other non-project activities.

- *Beneficial cumulative effects* for the combination of the Proposed Project and riverine restoration projects
- *No significant cumulative impact* for other non-project activities

Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

Water Supply/Water Rights

Potential Cumulative Impact 3.24-32 Cumulative water supply and water rights impacts from the combination of the Proposed Project and other potential non-project activities.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 8 – *Public Drinking Water Supplies*
- Condition 13 – *Hatcheries*
- *Condition 14 – Restoration*
- Condition 15 – *Water Supply Monitoring and Management*
- Condition 19 – *Recreation Facilities*
- Condition 21 – *Water Rights Modification*
- Condition 23 – *Consultation Requirements*

Air Quality

Potential Cumulative Impact 3.24-33 and EIS, page 3-624 Short-term increases in criteria air pollutant emissions under the Proposed Project in combination with forest and wildfire management projects.

- *Cumulatively considerable impact with mitigation for NO_X emissions*
- *No significant cumulative impact with mitigation for PM_{10} emissions*
- *No significant cumulative impact for ROG, CO, SO_2, and $PM_{2.5}$ emissions*

EIR Mitigation

- *Mitigation Measure AQ-1 – Off-Road Construction Equipment Engine Tier*. (as described under Potential Impact 3.9-1)

- *Mitigation Measure AQ-2 – On-Road Construction Equipment Engine Model Year*. (as described under Potential Impact 3.9-1)
- M*itigation Measure AQ-3 – Heavy-Duty Trucks Engine Model Year*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-4 – Blasting-related Dust Control Measures*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-5 – General Construction Dust Control Measures*. (as described under Potential Impact 3.9-1)

The State Water Board has requested that FERC require monitoring and reporting requirements for the air quality mitigation measures as described above in Potential Impact 3.9-1.

Geology, Soils, and Mineral Resources

Potential Cumulative Impact 3.24-40 and EIS, pages 3-600 to 3-602 Short-term soil disturbance, erosion, and sedimentation effects from the Proposed Project in combination with other construction projects.

- *Cumulatively significant impact for suspended sediment concentrations*

EIR and EIS Mitigation

- *Erosion and Sediment Control Plan*
- *EIS, pages 3-601 to 3-602* – Short drawdown period, expedite evacuation of readily mobilized sediments, and stabilize sediments with revegetation.

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- *Condition 8 – Soil Stability*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- *Condition 13 – Restoration*

Potential Cumulative Impact 3.24-41 Short-term soil disturbance, erosion, and sedimentation effects from the Proposed Project in combination with wildfire, mining, forest and wildfire management, and agriculture.

- *Not cumulatively considerable* for wildfire
- *No significant cumulative impact* for forest and wildfire management, mining-related activities, and agricultural activities

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*

Potential Cumulative Impact 3.24-42 Short-term hillslope instability, effects to earthen dam embankments, and/or bank erosion from the Proposed Project in combination with other potential non-project activities.

- *Not cumulatively considerable with mitigation* for short-term instability in reservoir rim areas
- *No significant cumulative impact* for instability of earthen embankments or bank erosion downstream of reservoirs

EIR Mitigation

- Mitigation Measure GEO-1 − Slope Stabilization. (as described under Potential Impact 3.11-3)

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- *Condition 4 – Sediment Deposits*
- Condition 18– *Slope Stability*

Historical Resources and Tribal Cultural Resources

Potential Cumulative Impact 3.24-45 Long-term effects on the Klamath River fishery tribal cultural resource of the Proposed Project in combination with restoration, flow enhancement, and water quality improvement projects.

- *Beneficial cumulative effects* in *Subarea 2* and *Subarea 3* of the historical and tribal cultural resources Area of Analysis

Applicable Water Quality Certification Conditions

- Condition 1 – Water Quality Monitoring and Adaptive Management
- Condition 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 13 – *Hatcheries*
- *Condition 14 - Restoration*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-46 Short-term historical and tribal cultural resources effects of the Proposed Project in combination with 2017 court-ordered flushing and emergency dilution flows.

- *No significant cumulative impact* related to short-term flooding and/or erosion of tribal cultural resources located within the 100-year floodplain
- *Beneficial cumulative effects* on fishery tribal cultural resource in the short term

The State Water Board has requested that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impacts 3.12-1, 3.12-3, and 3.12-8.

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*

Utilities and Service Systems

Potential Cumulative Impact 3.24-56 Short-term and long-term utilities and service system effects from the Proposed Project in combination with non-project activities.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 11 – *Waste Disposal*
- Condition 12 – *Hazardous Materials Management*
- Condition 23 – *Consultation Requirements*

Aesthetics

Potential Cumulative Impact 3.24-58 Short-term and long-term scenic resources effects from the Proposed Project in combination with restoration, flow enhancement, and water quality improvement projects, and other non-project activities.

- *No significant cumulative impact* from short-term changes in water quality including increased turbidity and reduced clarity
- *Beneficial cumulative impact* due to long-term changes in visual water quality from reduced algal blooms

Applicable Water Quality Certification Conditions

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- Condition 23 – *Consultation Requirements*

Recreation

Potential Cumulative Impact 3.24-62 Short-term and long-term recreation effects from the Proposed Project in combination with other restoration, flow enhancement, and water quality improvement projects.

- *Beneficial cumulative effects*

Applicable Water Quality Certification Conditions

- Condition 14 – *Restoration*
- Condition 19 – *Recreation Facilities*
- Condition 23 – *Consultation Requirements*

Potential Cumulative Impact 3.24-63 Short-term and long-term whitewater boating effects from the combination of the Proposed Project and water flow changes.

- *No significant cumulative impact*

Applicable Water Quality Certification Conditions

- Condition 3 – *Reservoir Drawdown*
- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

Hazards and Hazardous Materials

Potential Cumulative Impact 3.24-64 Short-term and long-term hazards and hazardous materials effects from the Proposed Project in combination with non-project activities.

- *No significant cumulative impact* for hazardous materials
- *Cumulatively considerable* for firefighting water access

EIR and EIS Mitigation

- *Fire Management Plan*

Applicable Water Quality Certification Conditions

- Condition 7 – *Remaining Facilities*
- Condition 10 – *Construction General Permit Compliance and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

2.20 Environmental Justice

EIS, Section 3.13.4 Effects on environmental justice communities

- *No significant impact with mitigation* in the areas of geology and soils, water supply, public services, fire management, traffic, air quality, and noise
- *Significant impact* in the areas of aquatic resources, recreation, traffic, aesthetics, socioeconomics, air quality, and noise

EIR and EIS Mitigation

- *Mitigation Measure GEO-1 − Slope Stabilization.* (as described under Potential Impact 3.11-3)
- *Mitigation Measure WQ-3 − Monitoring and Potential Remediation of Reservoir Sediments Deposited Along the Middle and Lower Klamath River Floodplain*. (as described under Potential Impact 3.2-13)
- *EIS, page 3-556 − Outreach to environmental justice communities regarding mitigation of impacts to slope stabilization, sediment release, and groundwater resources.*
- *California Water Supply Management Plan − Identification, monitoring, and funding for addressing groundwater wells that may be adversely impacted, including FERC recommendation for specific outreach to environmental justice communities*. (EIS, pages 3-543 – 3-544.)

- *Mitigation Measure HZ-1 – Hazardous Materials Management*. (as described under Potential Impact 3.21-1)
- *Mitigation Measure TR-1 – Transportation and Traffic*. (as described under Potential Impacts 3.22-1, 3.22-2)
- *Emergency Response Plan*
- *Fire Management Plan – Including specific outreach to environmental justice communities to address communication, as recommended by FERC staff, in Bullet No. 13.*
- *Recreation Facilities Plan – Multi-lingual signage to help inform residents of the changes anticipated with dam removal.*
- *Mitigation Measure AQ-1 – Off-Road Construction Equipment Engine Tier*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-2 – On-Road Construction Equipment Engine Model Year*. (as described under Potential Impact 3.9-1)
- M*itigation Measure AQ-3 – Heavy-Duty Trucks Engine Model Year*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-4 – Blasting-related Dust Control Measures*. (as described under Potential Impact 3.9-1)
- *Mitigation Measure AQ-5 – General Construction Dust Control Measures*. (as described under Potential Impact 3.9-1)
- *Noise and Vibration Control Plan (NVCP)* (as described in EIR, Volume II Appendix B: Definite Plan – Appendix O5)

Applicable Water Quality Certification Conditions

- *Condition 15 – Water Supply Monitoring and Management*
- *Condition 18 – Slope Stability*