

# **Mitigation, Monitoring, or Reporting Program for the Lower Klamath Project License Surrender**

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## **Mitigation, Monitoring, or Reporting Program for the Lower Klamath Project License Surrender**

Lead Agency:  
**State Water Resources Control Board**

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## **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                      |
| 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)<sup>1</sup> 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.

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 Mitigation, Monitoring, or Reporting Program (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, 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 Federal Energy Regulatory Commission (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 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 impact determinations for the Proposed Project within this MMRP do not replace or alter the complete CEQA impact analysis, which is contained within the EIR.

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 even where the EIR impact was 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

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<sup>1</sup> Public Resources Code, Sections 21000 *et seq.*

KRRC; 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 the Federal Regulatory Energy Commission. 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), and United States Army Corps of Engineers (USACE). Water quality certification Conditions 24 through 40 are general in nature, thus are not specific to any of the EIR impacts discussed within 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 and water quality certification conditions are provided in Section 1.1 below. The KRRC is responsible for implementing and attaining all the EIR 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. Additionally, Mitigation Measures TER-6 and TER-7 (regarding specific monitoring, planning

and actions to avoid potential impacts to grey wolf, bald eagle and golden eagle) requires reporting to the United States Fish and Wildlife Service and the California Department of Fish and Wildlife – as the applicable agencies named in the measures themselves.

## **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)
- Water Quality Management Plan (WQMP) (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)
- 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)
- Monitoring and Adaptive Management Plan to offset sediment impacts on mainstem spawning (WQC Condition 6)
- Spawning Habitat Evaluation (WQC Condition 6)
- Fish Presence Monitoring Plan (Fish Presence Plan) (WQC Condition 5)
- Tributary-Mainstem Connectivity Plan (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)
- Reconnaissance, Salvage, and Translocation Plan (for mussels) (WQC Condition 6)
- Hatcheries Management and Operations Plan (Hatcheries Plan) (WQC Condition 13)
- Restoration Plan, with the goal of no net loss of wetland or riparian habitat functions (WQC Condition 14)
- Amphibian and Reptile Rescue and Relocation Plan (WQC Condition 16)
- Western Pond Turtle Rescue and Relocation Plan (WQC Condition 16)
- Eagle Avoidance and Management Plan (WQC Condition 17)
- Obtain a take permit in accordance with the Bald and Golden Eagle Protection Act (if necessary) (WQC Condition 17)

- Report detailing 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 drinking water providers in relation to impacts to the Klamath River water supply (WQC Condition 8)
- Outreach to residents to identify groundwater wells within 2.5 miles 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)
- Submit to the Hoopa Valley Tribe, and any other tribe that has obtained treatment-as-a-state status, copies of any request to end or modify monitoring under 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)
- 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-2)
- 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 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 (WQC Condition 8)
- Decommission in place, or remove and dispose of, 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-2)
- Inspect structures being removed for hazardous materials (WQC Conditions 7 and 12)
- Offer to relocate residents who reside in structures on potentially unstable slopes (WQC Condition 18)
- Drawdown over no more than a single five-month period between November 1 and March 15 of the following year (WQC Condition 3)
- Maximum drawdown rates are two feet/day during the first phase of Copco No. 1, five feet/day during the second phase of Copco No. 1, and five feet/day for Iron Gate (WQC Condition 3)
- Maximum additional discharge: below Copco No. 1 Dam associated with Copco No. 1 drawdown of 6,000 cubic feet per second (cfs); below Iron Gate Dam associated with Iron Gate drawdown of 6,000 cfs (WQC Condition 3)
- Best management practices (BMPs) for ground-disturbing activities (WQC Condition 10)
- 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 delineated wetlands (Condition 14)
- Cofferdams or barriers to isolate construction areas from instream flow (WQC Condition 3)
- Release coho salmon from Iron Gate Hatchery into the Klamath River two weeks later than the typical release schedule during drawdown (WQC Condition 6)
- Aquatic formulation of glyphosate during dry weather, if used, or another low toxicity herbicide (WQC Condition 9)
- Review the CDFW gray wolf activity map every six months and if the Proposed Project overlaps with gray wolf activity, and if required, implement denning surveys, reduced driving speeds, limited operating periods, disturbance buffers, signage on and modification to haul roads, and monitoring (Mitigation Measure TER-6)
- Conduct clearing, cutting, and grubbing activities outside of the eagle nesting season (WQC Condition 17)
- Implement restriction buffers for eagle nests (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)
- Implement the Iron Gate Hatchery Operations Plan, including a minimum flow in Bogus Creek of 4.5 cfs (WQC Condition 13)
- 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)
- Develop 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)
- 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'-dichlorodiphenyldichloroethane (DDD), 2,3,7,8-tetrachlorodibenzodioxin (TCDD), 4,4'-dichlorodiphenyldichloroethylene (DDE), and 2,3,7,8-pentachlorodibenzofuran (PECDF) from sediment samples at least once pre-

- drawdown and at least once within six months of drawdown (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 third year following the completion of drawdown for 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- and early drawdown surveys (WQC Condition 6)
  - Monitor bald and golden eagle use patterns for two years prior to construction within two miles of disturbance areas (WQC Condition 17)
  - Conduct at least one pre-construction bald and golden eagle survey within two weeks prior to construction (WQC Condition 17)
  - Monitor bald and golden eagle nests within a one-mile buffer of anticipated noise disturbance (WQC Condition 17)
  - 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)
  - 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)
- 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 following spawning gravel surveys (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)
- Drinking water mitigation measures report and summary of implementation at least two months prior to initiating drawdown (WQC Condition 8)
- Construction general permit reporting (WQC Condition 10)
- Waste disposal reporting (WQC Condition 11)
- Hazardous materials reporting (WQC Condition 12)
- Restoration reporting within six months of concluding drawdown activities, and annually thereafter (WQC Condition 14)
- Water supply management reporting prior to and annually for the first two years following drawdown on implementation of the surface water supply activities. The first annual Water Supply Management Report 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 (WQC Condition 15)
- Groundwater report annually for a minimum of three years following completion of drawdown (WQC Condition 15)
- Amphibian and reptile reporting (WQC Condition 16)
- Report bald and golden eagle observations within one month of the surveys (WQC Condition 17)
- 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)
- Report on the locations of gray wolves every six months (Mitigation Measure TER-6)
- 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 Increases in suspended sediments due to release of sediments currently trapped behind the dams.**

- *Significant and unavoidable* 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

**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 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 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 3.2-3)
- *Mitigation Measure TER-1 – Establish a 20-foot buffer around 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 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 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 Human exposure to inorganic and organic contaminants due to release and exposure of reservoir sediment deposits.**

- *No significant impact* with mitigation

**EIR 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)

**Applicable Water Quality Certification Conditions**

- Condition 1 – *Water Quality Monitoring and Adaptive Management*
- Condition 2 – *Compliance Schedule*
- 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 2 – *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 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 3.2-3)*
- *Mitigation Measure TER-1 – Establish a 20-foot buffer around 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 7 – *Remaining Facilities*
- Condition 10 – *Construction: General Permit Compliance, and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- 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 and Fall Creek hatchery production on Klamath River and Fall Creek water quality.**

- *No significant impact* in the short term and long term for water quality in the Middle Klamath River downstream of Iron Gate Hatchery
- *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 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 3.2-3)
- *Mitigation Measure TER-1 – Establish a 20-foot buffer around 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*

- 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 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.**

- *No significant impact 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 Effects on eulachon critical habitat quality due to short-term sediment releases due to dam removal.**

- *No 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.**

- *No significant impact 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*

**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 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 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.**

- *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 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 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.**

- *No significant impact* for Lost River and shortnose sucker populations in the short term
- *No significant impact* for Lost River and shortnose sucker populations in the long term

**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 3.3-15 Effects on the eulachon population due to short-term sediment releases and long-term changes in habitat quality due to dam removal.**

- *No significant impact* for eulachon 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 3.3-16 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 due to short-term sediment releases and long-term changes in habitat quality due to dam removal.**

- *No significant impact* for *M. falcata* and *G. angulata* in the short or long term

- *Significant and unavoidable* impact for *Anodonta spp.* in the short and long term
- *No significant impact* for freshwater clams in the short or 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 3.3-20 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.**

- *No significant impact with mitigation* on Chinook salmon, coho salmon, or steelhead in the short term or long term

**EIR Mitigation**

- *Mitigation Measure AQR-3 – Bogus Creek Flow Diversions.* (as described under Potential Impact 3.3-23)

**Applicable Water Quality Certification Conditions**

- Condition 13 – *Hatcheries*
- Condition 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

**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 Terrestrial Resources**

### **Potential Impact 3.5-1 Construction-related impacts on wetland and riparian vegetation communities.**

- *No significant impact* in the short term with mitigation

#### **EIR Mitigation**

- *Mitigation Measure TER-1 Establish a 20-ft Buffer Around Delineated Wetlands.* (as described under Potential Impact 3.5-1)
- *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 3.2-3)

#### **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.**

- *No significant impact* in the short term and long term

#### **Applicable Water Quality Certification Conditions**

- Condition 14 – *Restoration*
- Condition 23 – *Consultation Requirements*

### **Potential Impact 3.5-3 Short-term and long-term impacts on wetland habitat downstream of the Lower Klamath Project dams due to erosion or sediment deposition.**

- *No significant impact* 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 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.**

- *No 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 3.5-5 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.**

- *No significant impact with mitigation* in the short term
- *No significant impact* in the long term

**EIR Mitigation**

- *Mitigation Measure TER-1 – Establish a 20-foot buffer around delineated wetlands.* (as described under Potential Impact 3.5-1)

**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 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
- *Significant 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 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 Short-term impacts on special-status amphibian, reptiles, and mammals from construction activities.**

- *No significant impact with mitigation* for amphibians and reptiles and gray wolf
- *Significant and unavoidable* for bats and American badger

**EIR Mitigation**

- *Mitigation Measure TER-2 – Amphibian and Reptile Management.* (as described under Potential Impact 3.5-10)
- *Mitigation Measure TER-3 – Western Pond Turtle Pre-construction Surveys.* (as described under Potential Impact 3.5-10)
- *Mitigation Measure TER-6 – Gray Wolf.* (as described under Potential Impact 3.5-10)

**Applicable Water Quality Certification Conditions**

- Condition 10 – *Construction: General Permit Compliance, and Water Quality Monitoring and Protection Plans*
- Condition 12 – *Hazardous Materials Management*
- Condition 16 – *Amphibian and Reptile Management*
- Condition 23 – *Consultation Requirements*

**Potential Impact 3.5-13 Short-term impacts on bald and golden eagles from construction-related noise and nesting habitat alterations.**

- *No significant impact with mitigation* for bald and golden eagles

**EIR Mitigation**

- *Mitigation Measure TER-7 – Bald and Golden Eagle.* (as described under Potential Impact 3.5-13).

**Applicable Water Quality Certification Conditions**

- Condition 17 – *Bald and Golden Eagle Management*

**Potential Impact 3.5-16 Effects on special-status amphibians and reptiles in riverine habitats from short-term high suspended sediment concentrations (SSCs) and flows and long-term changes in water quality.**

- *No significant impact* for amphibians (Pacific tailed frog, southern torrent salamander, northern red-legged frog) and reptile (western pond turtle) populations due to short-term increases in SSCs or flows
- *Significant and unavoidable impact* for individual foothill yellow-legged frog egg masses, if present, due to short-term increases in SSCs
- *Beneficial* for all amphibian and reptiles due to long-term improved water quality

**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 3.5-17 Effects on benthic macroinvertebrates from short-term dewatering and sedimentation and long-term alterations to habitat.**

- *No 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 Short-term and long-term impacts on western pond turtle from loss of aquatic habitat.**

- *No significant impact* in the short term with mitigation
- *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).

**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 flow diversions.**

- *No significant impact with mitigation*

**EIR Mitigation**

- *Mitigation Measure AQR-3 – Bogus Creek Flow Diversions.* (as described under Potential Impact 3.3-23)

**Applicable Water Quality Certification Conditions**

- Condition 13 – *Hatcheries*
- Condition 23 – *Consultation Requirements*



**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*

**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*

## **2.4 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 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*

## 2.5 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.

- *No significant impact*

### Applicable Water Quality Certification Conditions

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

## 2.6 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.

- *No 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.

- *No 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*

**2.7 Air Quality Potential Impacts**

**Potential Impact 3.9-1 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<sub>x</sub> emissions*
- *No significant impact with mitigation for PM<sub>10</sub> emissions*
- *No significant impact for ROG, CO, SO<sub>2</sub>, and PM<sub>2.5</sub> 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)
- *Mitigation 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 will request that FERC require at a minimum the following monitoring and reporting requirements for the 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.

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 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)
- *Mitigation 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 will request 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 Mitigation**

- *Mitigation Measure HZ-1 – Hazardous Materials Management.* (as described under Potential Impact 3.21-1)

**Applicable Water Quality Certification Conditions**

- *Condition 12 – Hazardous Materials Management*

**2.8 Greenhouse Gas Emissions and Energy Potential Impacts**

**Potential Impact 3.10-1 Generation of direct 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 hatcheries 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 will request 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<sub>2e</sub>) of construction greenhouse gas emissions that will be generated by the Proposed Project.

## **2.9 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** 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 diatomaceous deposits along the rim and below the Copco No. 1 Reservoir water level

### **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 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 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 in the short term
- *No significant impact* 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*

## **2.10 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 Mitigation**

- *Mitigation Measure TCR [Tribal Cultural Resource]-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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).

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 Mitigation**

- *Mitigation Measure TCR [Tribal Cultural Resource]-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-5 – Implementation on Yurok Reservation.* (as described under Potential Impact 3.12-3)



The State Water Board will request 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 will request 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 Mitigation**

- *Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)

- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-4 – Endowment for Post-Project Implementation.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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* prior to land transfer
- *No significant impact with mitigation* after land transfer

#### **EIR Mitigation**

- *Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-6 – Land Transfer.* (as described under Potential Impact 3.12-8)
- *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)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1)

The State Water Board will request 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 with mitigation*

**EIR Mitigation**

- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-)

The State Water Board will request 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 Mitigation**

- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1 )

The State Water Board will request 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 with mitigation*

### **EIR Mitigation**

- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-1 )

**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 with mitigation*

### **EIR Mitigation**

- *Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program.* (as described under Potential Impact 3.12-1)
- *Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan.* (as described under Potential Impact 3.12-)

The State Water Board will request that FERC require monitoring and reporting requirements for the tribal cultural resources mitigation measures as described above in Potential Impact 3.12.-1.

## **2.11 Public Services**

**Potential Impact 3.17-1 Increased public services response times for emergency fire, police, and medical services due to construction and demolition activities.**

- *Significant and unavoidable with mitigation*

### **EIR Mitigation**

- *Mitigation Measure HZ-1 – Hazardous Materials Management.* (as described under Potential Impact 3.21-1)

### **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*

**Applicable Water Quality Certification Conditions**

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

**2.12 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*

**2.13 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*

**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 Visual changes resulting from reservoir drawdown and restoration including temporarily bare/unvegetated banks.**

- *Significant and unavoidable* in the short term (temporary), until vegetation is re-established, due to reservoir drawdown
- *No significant impact* in the long term due to reservoir drawdown

**Applicable Water Quality Certification Conditions**

- Condition 3 – *Reservoir Drawdown*

**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 19 – *Recreation Facilities*

**2.14 Recreation**

**Potential Impact 3.20-1 Effects on existing recreational facilities and opportunities due to access restrictions, noise, dust, and/or sediment release resulting from construction activities.**

- *No significant impact*

**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 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.**

- *No significant impact*

**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 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 (within 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 Effects on Wild and Scenic River resources, designations, or eligibility for listing.**

- *No 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*

**2.15 Hazards and Hazardous Materials**

**Potential Impact 3.21-1 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 Mitigation**

- *Mitigation Measure HZ-1 – Hazardous Materials Management.* (as described under Potential Impact 3.21-1)

**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 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 Mitigation**

- *Mitigation Measure HZ-1 – Hazardous Materials Management. (as described under Potential Impact 3.21-1)*

**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 Mitigation**

- *Mitigation Measure HZ-1 – Hazardous Materials Management. (as described under Potential Impact 3.21-1)*

**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 3.21-8 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

#### **Applicable Water Quality Certification Conditions**

- Condition 15 – *Water Supply Monitoring and Management*
- Condition 23 – *Consultation Requirements*

### **2.16 Transportation and Traffic**

**Potential Impact 3.22-1 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**

**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.**

Potential Impacts 3.22-1 and 3.22-2 were analyzed together.

- *No significant impact with mitigation*

#### **EIR Mitigation**

*Mitigation Measure TR-1 – Transportation and Traffic.* (as described under Potential Impacts 3.22-1 and 3.22-2)

The State Water Board will request 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.

## **2.17 Cumulative Effects**

### **2.17.1 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 Short-term increases in suspended sediments under the Proposed Project in combination with the 2017 court-ordered flushing and emergency dilution flows.**

- *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 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.**

- *Cumulative 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*

**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 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*

**2.17.2 Aquatic Resources**

**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 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 20 – *Limitations on Hydropower Operations*
- Condition 23 – *Consultation Requirements*

**2.17.3 Terrestrial Resources**

**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*



#### 2.17.4 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*

#### 2.17.5 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*

#### 2.17.6 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 15 – *Water Supply Monitoring and Management*
- Condition 19 – *Recreation Facilities*
- Condition 21 – *Water Rights Modification*
- Condition 23 – *Consultation Requirements*

### 2.17.7 Air Quality

**Potential Cumulative Impact 3.24-33: 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<sub>x</sub> emissions*
- *No significant cumulative impact with mitigation for PM<sub>10</sub> emissions*
- *No significant cumulative impact for ROG, CO, SO<sub>2</sub>, and PM<sub>2.5</sub> 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)*
- *Mitigation 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 will request that FERC require monitoring and reporting requirements for the air quality mitigation measures as described above in Potential Impact 3.9-1.

### 2.17.8 Geology, Soils, and Mineral Resources

**Potential Cumulative Impact 3.24-40 Short-term soil disturbance, erosion, and sedimentation effects from the Proposed Project in combination with other construction projects.**

- *No significant cumulative impact*

#### **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 3.24-41 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 18– *Slope Stability*

**2.17.9 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 5 – *Anadromous Fish Presence*
- Condition 6 – *Aquatic Resources*
- Condition 13 – *Hatcheries*
- 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

**Applicable Water Quality Certification Conditions**

- Condition 3 – *Reservoir Drawdown*

### **2.17.10 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*

### **2.17.11 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*

### **2.17.12 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*

### **2.17.13 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

#### **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*