

ATTACHMENT 4

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

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Introduction

The State Water Resources Control Board (State Water Board) has prepared CEQA findings and statements of overriding considerations to accompany the certified Final Environmental Impact Report for the Lower Klamath License Surrender (Final EIR).

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

1. Improve the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to *Microcystis aeruginosa* and associated toxins, water temperature, and levels of biostimulatory nutrients.
2. Advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation.
3. Restore volitional anadromous fish passage in the Klamath Basin to viable habitat currently made inaccessible by the Lower Klamath Project dams.
4. Ameliorate conditions underlying high disease rates among Klamath River salmonids.

A more detailed description of the Proposed Project is provided in Section 2 of Volume I of the EIR, *Project Description*.

As described in the EIR, Vol. III, Section 3.3, the Klamath River was once one of the largest salmon rivers on the West Coast, but the fishery has declined in part due to the establishment and operation of the hydroelectric facilities that constitute the Lower Klamath Project (FERC Project No. 14083). Coho salmon have been listed as threatened under the Endangered Species Act, and both federal and state agencies are reviewing requests to list the Spring Run Chinook. In addition to the facilities' contributions to fisheries' declines, the facilities are sources or contribute to a number of water quality problems, including the development of annual toxic blue-green algae blooms that have triggered annual public health warnings since 2005. The EIR analyzes the potential impacts of removal, and finds that the Proposed Project would

further restoration purpose and objectives described above, and is the environmentally superior alternative. The water quality impairments and salmonid decline have had a profound effect on tribes for whom salmonids are an irreplaceable element of sustenance and culture. (See e.g. EIR, Vol. 1, pages 2-21 to 2-22, 3-812 to 3-813, Vol. III, page 2-69.) The economic effects of Klamath River salmonid declines on fishing communities along the West Coast have also been significant, triggering commercial salmonid fishing restrictions and closures. (See e.g. EIR, Vol. 1, pages 2-21 to 2-22, 5-5.) In furthering the purpose and objectives of the Proposed Project, it is anticipated that the social and economic harms linked to the environmental damage and fishery declines would likewise be ameliorated. Water Quality Certification for the Lower Klamath Project, Section 4.0 Analysis, pages 20-27 provides more detailed summary of the water quality related aspects of the Proposed Project, and the role of the Lower Klamath Project facilities in the larger context of the Klamath Basin. .

The State Water Board is the lead agency for the Proposed Project under the California Environmental Quality Act (CEQA) because it will issue a water quality certification for the Proposed Project pursuant to Section 401 of the Clean Water Act. The State Water Board issued a draft EIR in December 2018, recirculated portions of a draft EIR in December 2019, and the Final EIR in April 2020.

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

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

In other words, for each significant impact, the agency must find that the impact has been mitigated or avoided, that the ability to require mitigation or avoidance lies with

another agency (which has required or should require the same), or that specific considerations make mitigation or avoidance infeasible.

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

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

Water Quality

Overview

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

The Proposed Project includes several components that are anticipated to have a significant effect on water quality in the short term but are necessary to accomplish the intended long-term water quality improvements. Actions like drawing down the reservoirs, pre-construction and deconstruction activities, post-deconstruction release of trapped sediment, restoration work, and the return of the Klamath River in California to free-flowing riverine conditions could result in short-term impacts to water quality parameters. For example, removal of the Lower Klamath Project Dams will result in the release of accumulated sediments that are currently trapped behind the dams into the Klamath River. Over the short term, this effect is considered significant because it will result in increased levels of suspended sediment concentrations and unavoidable because measures that might avoid the effect, such as removing the sediment from the reservoirs prior to removal of the dams, are not feasible. However, over the long term this impact is not considered to be significant because Klamath River flows will flush the released sediment down and out of the river and suspended sediment concentration

levels will return to modeled background levels. And at the same time, removal of the Lower Klamath Project Dams will be beneficial with respect to water temperatures in some Klamath River reaches over the short and long term.

The EIR¹ examines the potential effect of the Proposed Project on water temperature, suspended sediments, nutrient levels, dissolved oxygen, pH, chlorophyll-a and algal toxins, and inorganic and organic contaminants. As discussed in detail in EIR Section 3.2, the State Water Board concludes that Potential Impacts 3.2-1, 3.2-2, 3.3-3 (long term), 3.2-5, 3.2-6, 3.2-7, 3.2-8, 3.2-9 (short-term for the Middle Klamath River downstream from the Salmon River, the Lower Klamath River, and the Klamath River Estuary), 3.2-10, 3.2-11, 3.2-12, 3.2-14, and 3.2—17 (short and long term for water quality in the Middle Klamath River downstream of Iron Gate Hatchery and for water quality except water temperature and dissolved oxygen in Fall Creek downstream of Fall Creek Hatchery) will either not be significant or will be beneficial. Beneficial effects of the Proposed Project include short- and long-term water temperature improvements in the Hydroelectric Reach and the Middle Klamath River to the confluence with the Salmon River, short- and long-term elimination of summer and fall extremes in dissolved oxygen (DO) concentrations in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam, short- and long-term decreases in summer and fall pH and daily pH fluctuations in the Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam, and short- and long-term reductions of chlorophyll-a and algal toxins for the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary.

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

CEQA Findings

Potential Impact 3.2-3 (short term)

The State Water Board finds that increases in suspended sediments due to the release of sediments currently trapped behind the dams would be a significant environmental impact over the short term (two years following dam removal) for the Hydroelectric Reach, Middle Klamath River, Lower Klamath River, Klamath River Estuary, and Pacific Ocean nearshore environment, and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

¹ References to “the EIR” mean the complete Environmental Impact Report for the Lower Klamath License Surrender Project, including the Draft EIR, Volumes I and II and the Recirculated Portions of the Draft EIR (as modified in Volume II) and Volume III of the EIR (responses to comments and text changes from the Draft EIR). Please note that page numbers referencing the Draft EIR may have minor updates in Volume III. In some instances, Volume numbers are provided for additional specificity.

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

The impact will occur because there are accumulated sediments in the bottoms of the Lower Klamath Project reservoirs that will be released. It is not feasible to mitigate the impact, because there is no way to physically remove all of the accumulated sediments or otherwise avoid release during drawdown. Dredging would be expected to leave a minimum of 57 percent of the accumulated sediment which would still result in significant sediment impacts from reservoir drawdown, providing only a marginal benefit to fish. Furthermore, the dredging itself would be expected to result in considerable environmental impacts to terrestrial resources and possibly to cultural resources (EIR, p. 3-95). Extending the drawdown period might reduce the overall volume of sediment that is mobilized, but would increase the duration of events of elevated suspended sediment concentrations and so would not mitigate, and would potentially increase, the impact. (*Id.*)

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

Potential Impact 3.2-4

The State Water Board finds that the potential increase in suspended material from stormwater runoff due to pre-construction, dam deconstruction and removal, and restoration activities in the Hydroelectric Reach and the Middle Klamath River immediately downstream of Iron Gate Dam is potentially a significant environmental

effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Section 3.2 of the EIR explains that the following activities would have the potential to affect water quality: pre-construction activities; dam removal activities; restoration activities; modification of non-natural fish barriers within the historical reservoir footprints as needed to enable volitional fish passage, which may include in-water work; restoration activities; new recreation area facilities development at river sites; and any remaining construction activities for the eight recreation sites to be removed. All of the aforementioned activities could result in the disturbance of soil within the Limits of Work and result in loose sediment that could then be suspended in stormwater runoff during rainfall events. Within the Limits of Work (Figures 2.2-5, 2.7-1, and 2.7-3), the Proposed Project includes best management practices (BMPs) for construction and other ground-disturbing activities to reduce the activities' potential impacts to water quality in wetlands and other surface waters (Appendix B: Definite Plan – Appendix J).

The BMPs focus on general stormwater-related contamination, but their implementation is expected to also minimize or eliminate the potential for construction-related increases in suspended material that could enter wetlands and other surface waters located within the Limits of Work, including the Hydroelectric Reach, tributaries of the Klamath River that enter this reach (as appropriate), or the Middle Klamath River immediately downstream of Iron Gate Dam. The Proposed Project does not, however, specifically identify BMPs for pre-construction, reservoir restoration, or upland restoration activities that would occur within the Limits of Work. Further, the proposed BMPs are not sufficiently comprehensive to avoid all potential violations of water quality standards or other degradation of water quality in affected portions of the wetlands, Hydroelectric Reach, tributaries to the Klamath River that enter this reach (as appropriate), or the Middle Klamath River immediately downstream of Iron Gate Dam, during these other periods of Proposed Project activity. Such violations of water quality standards or other related degradation of water quality would be a significant impact without mitigation. Implementation of mitigation measures WQ-1, TER-1, and HZ-1 would reduce any potential impacts not already addressed by the BMPs to not significant.

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

- Pollution and erosion control measures will be implemented to prevent pollution caused by construction operations and to reduce contaminated stormwater runoff.
- Oil-absorbing floating booms will be kept onsite, and the contractor will respond immediately to aquatic spills during construction.

- Vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids. If such leaks or drips do occur, they will be cleaned up immediately.
- Equipment maintenance and/or repair will be confined to one location at each project construction site. Runoff in this area will be controlled to prevent contamination of soils and water.
- Dust control measures will be implemented, including wetting disturbed soils.
- A Stormwater Pollution Prevention Plan (SWPPP) will be implemented to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering waterways or waterbodies.

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

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

Mitigation Measure HZ-1 Hazardous Materials Management. This measure requires submittal of a Final Hazardous Materials Management Plan to the State Water Board Deputy Director for review and approval no later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities. This mitigation also requires the Final Hazardous Materials Management Plan to include any modifications to the proposed Hazardous Materials Management Plan, be developed in coordination with State Water Board staff to provide the same or better level of protection regarding procedures for: (1) proper disposal or abatement of hazardous materials encountered during Proposed Project activities; (2) proper storage, containment, and response to spills caused by the Proposed Project; and (3) proper removal and disposal of septic tanks as part of the Proposed Project.

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

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

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

The State Water Board finds that increases in biochemical oxygen demand (BOD) and reductions in dissolved oxygen due to release of sediments currently trapped behind the dams would be a significant environmental impact over the short-term for the Hydroelectric Reach and Middle Klamath River from Iron Gate Dam to the Salmon River and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

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

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

The No Project Alternative and the Continued Operations with Fish Passage Alternative would not release the reservoir sediment stored behind the Lower Klamath Project dams because these alternatives would not remove the existing dams. Thus, there would be no short-term increase in suspended sediment concentrations (SSCs) during drawdown and there would be no significant impact. However, there are large summertime variations in dissolved oxygen in the Hydroelectric Reach and dissolved oxygen concentrations in the Middle Klamath River immediately downstream of Iron

Gate Reservoir under the existing conditions and the Continued Operations with Fish Passage Alternative. These concentrations fall below the Basin Plan minimum dissolved oxygen criteria (Section 3.2.2.5 Dissolved Oxygen), in either the short or the long term, and result in adverse conditions. In addition, the No Project Alternative would not have any of the benefits of the Proposed Project. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these two alternatives are not environmentally superior.

Potential Impact 3.2-13

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

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

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

Mitigation Measure WQ-2 will reduce the potential impact to less than significant because it requires the KRRC to identify and implement appropriate measures to prevent the Proposed Project from resulting in service of water that fails to meet

drinking water quality standards. Potential actions include treatment of water to attain drinking water standards or the provision of an alternate potable water supply to affected areas. In addition, the EIR concludes that it is unlikely that the deposition of potentially contaminated sediments along the Klamath River banks would result in a significant impact because the potential for exposure (to arsenic, specifically) is expected to remain within background conditions. In an abundance of caution, however, the EIR includes Mitigation Measure WQ-3, which requires the KRRC to assess sediments deposited along the Middle and Lower Klamath River to determine whether concentrations of arsenic exceed background levels. If this monitoring shows that the deposited sediments are contaminated in excess of background levels, the KRRC is required to remove or cap the deposits to protect against the possibility of human exposure.

Potential Impact 3.2-15

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

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

However, the EIR includes mitigation measures that will reduce the potential impact to less than significant by lessening the potential for the impact to occur, and by providing, in the event the impact does occur, for responsive actions that will abate the impact. Mitigation Measure WQ-1 applies proposed construction BMPs that will prevent contamination of soil and water to all ground-disturbing activities that will occur within the Limits of Work under the Proposed Project, including ground-disturbing pre-construction and restoration activities. Mitigation Measure TER-1 establishes a minimum of a 20-foot buffer around all delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would result in a significant environmental impact. Mitigation Measure HZ-1 requires submittal of a Final Hazardous Materials Management Plan (Final Hazardous Materials Management Plan)

to the State Water Board Deputy Director for review and approval no later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities. This measure also requires the Final Hazardous Materials Management Plan to include any modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff that provide the same or better level of protection regarding procedures for proper disposal or abatement of hazardous materials encountered during Proposed Project activities; proper storage, containment, and response to spills caused by the Proposed Project; and proper removal and disposal of septic tanks as part of the Proposed Project.

Potential Impact 3.2-16

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

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

Implementation of Mitigation Measure WQ-4 will avoid significant water quality impacts resulting from the application of herbicides in connection with restoration activities. The measure requires that herbicides used in connection with restoration sites be appropriate for use near aquatic environments and includes requirements for application of herbicides that will reduce the potential for herbicide to reach the Klamath River in a manner that will pose risks of significant toxicity to aquatic species.

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

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

The Proposed Project includes restarting production at Fall Creek Hatchery, which has not been used to produce fish since 2003. Production at Fall Creek Hatchery would increase from zero under existing conditions to 75,000 coho yearlings and 115,000 Chinook yearlings with the Proposed Project. Fall Creek Hatchery is located on and discharges water to Fall Creek. Fall Creek Hatchery discharges are expected to alter water temperature from -0.5°F to 2.2°F. The Thermal Plan standard for COLD interstate waters requires no increase in temperature from existing conditions. Without mitigation, this results in significant potential for the discharges to result in exceedances of water quality standards for water temperature, which would be a significant impact even though any increase in temperature is projected to be numerically small and intermittent. The Fall Creek Hatchery discharges may also cause reductions in levels of dissolved oxygen in the receiving waters. While the potential for this to occur is low, even infrequent reductions of dissolved oxygen below Basin Plan objectives is deemed a significant impact.

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

With respect to dissolved oxygen, the EIR notes that hatcheries manage dissolved oxygen concentrations for fish using flow control, passive aeration devices, and mechanical aeration. It is anticipated that these measures will for the most part prevent reductions of dissolved oxygen concentrations in Fall Creek below Basin Plan objectives, but it is not certain that these measures will feasibly avoid the impact in every case, so there remains potential for the Proposed Project to significantly affect dissolved oxygen in Fall Creek.

The EIR examined a No Hatchery Alternative that would eliminate the potential for the dissolved oxygen and temperature impacts on Fall Creek. However, because the No Hatchery Alternative would increase the risk of a significant reduction in fish available for tribal harvest in the short term, it would result in a potentially significant short-term impact on the Klamath Riverscape as a tribal cultural resource (Potential Impact 3.12-9). Additionally, the No Hatchery Alternative would not as readily achieve the restoration purpose of the Proposed Project. One of the environmental objectives of the proposed Project is to *timely* “advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation.” Relative to the Proposed Project, the No Hatchery Alternative would reduce the anticipated rate of reintroduction of coho and Fall Run Chinook salmon – delaying

benefits to both of these populations, to the associated commercial, recreational and tribal fisheries, as well as to the larger ecosystem that benefits from the anadromous fish population. Additionally, the No Hatchery Alternative would reduce the near-term resiliency of these populations to environmental disturbance or other threats in the near term, as compared to the Proposed Project's maintaining of the hatcheries.

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

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

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

Potential Impact 3.2-18

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

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

Mitigation Measure WQ-1 applies proposed construction BMPs that will prevent contamination of soil and water to all ground-disturbing activities that will occur within the Limits of Work under the Proposed Project, including ground-disturbing pre-construction and restoration activities. Mitigation Measure TER-1 establishes a minimum of a 20-foot buffer around all delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to

wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would result in a significant environmental impact. Mitigation Measure HZ-1 requires submittal of a Final Hazardous Materials Management Plan (Final Hazardous Materials Management Plan) to the State Water Board Deputy Director for review and approval no later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities. This measure also requires the Final Hazardous Materials Management Plan to include any modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff that provide the same or better level of protection regarding procedures for proper disposal or abatement of hazardous materials encountered during Proposed Project activities; proper storage, containment, and response to spills caused by the Proposed Project; and proper removal and disposal of septic tanks as part of the Proposed Project.

Statement of Overriding Considerations

Potential Impact 3.2-3 (short term)

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

The Proposed Project will have several beneficial effects on water quality. Over the short term and the long term, in the Hydroelectric Reach and the Middle Klamath River to the confluence of the Salmon River, the Proposed Project will result in increases in spring water temperatures and diel temperature variation, and decreases in late summer/fall water temperatures. These changes are expected to result in earlier fry emergence and better growth and migration conditions for anadromous fish, while

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

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

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

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

As stated above the Proposed Project will have several beneficial effects on water quality. Because over the long term the Proposed Project will result in increases in dissolved oxygen levels in the Hydroelectric Reach and Middle Klamath River immediately downstream of Iron Gate Dam during summer and fall, it will eliminate existing extremes in dissolved oxygen that occur in those reaches in the summer and fall, which will improve conditions for aquatic species. In addition, over the short term

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

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

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

Restarting operations at Fall Creek Hatchery will have a significant adverse effect on water temperatures and dissolved oxygen in Fall Creek downstream of the hatchery. These impacts are anticipated to occur, if at all, intermittently and only over the short term (defined for the purposes of the analysis of this impact to be eight years starting with dam removal year 2). However, the effects will be significant in that dissolved oxygen and temperature levels could violate the applicable water quality standards. More specifically, hatchery operations could result in the discharge of water that increases the temperature of Fall Creek, thus violating the COLD standard of the Thermal plan, or that causes dissolved oxygen saturations in Fall Creek to fall below the objective set forth in the Basin Plan. As explained above, mitigation or avoidance of these potential impacts is not feasible.

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

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

Conclusions

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

The Proposed Project aims to restore the Klamath River to a more natural riverine condition, thus eliminating existing features that imperil fish species by altering natural flow and temperature regimes and create conditions in which fish diseases can flourish, in addition to blocking anadromous fish access to significant habitat. Over the long-term, the Proposed Project will move the Klamath River closer to attainment of applicable water quality objectives and improve conditions for aquatic species. Accomplishing these goals requires actions that will temporarily produce significant

adverse impacts. The State Water Board has determined that, individually and collectively, the significant and unavoidable water quality effects of the Proposed Project are outweighed by the water quality and other benefits of the Proposed Project described above, and are therefore acceptable.

Aquatic Resources

Overview

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

The EIR examines the potential effect of the Proposed Project on aquatic resources in the Klamath River. As discussed in detail in EIR Volume I Section 3.3, the State Water Board concludes that Potential Impacts 3.3-1 (long-term), 3.3-2, 3.3-3, 3.3-4 (long-term), 3.3-5, 3.3-6, 3.3-7, 3.3-8, 3.3-9, 3.3-10, 3.3-11, 3.3-12, 3.3-13, 3.3-14, 3.3-15, 3.3-16, 3.3-17, 3.3-18, 3.3-19 (*M. falcata*, *G. angulata*, and freshwater clams), 3.3-20, 3.3-21, 3.3-22, 3.3-24 will either not be significant or will be beneficial. Beneficial effects of the Proposed Project include long-term beneficial effects on coho salmon critical habitat quality and quantity; long-term beneficial effects on Chinook and coho salmon Essential Fish Habitat (EFH) quality and quantity; long-term beneficial effects on fall-run and spring-run Chinook salmon, coho salmon, steelhead, Pacific lamprey, and redband trout populations due to increased habitat quality and quantity; short-term and long-term beneficial effects on species interactions between introduced resident fish species and native aquatic species due to short- and long-term changes in habitat quality and quantity; and long-term beneficial effects on benthic macroinvertebrate habitat quality.

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

CEQA Findings

Potential Impact 3.3-1

The State Water Board finds that the Proposed Project would have a potentially significant effect on coho salmon critical habitat quality and quantity due to short-term sediment releases, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that in the short term, under the Proposed Project, designated critical habitat supporting Southern Oregon/Northern California Coast (SONCC) coho salmon would be degraded from elevated suspended sediment concentrations (SSCs) and sediment deposition downstream of Iron Gate Dam (see Volume I Section 3.3.5.1 Suspended Sediment and Volume II Appendix E, and Volume I Section 3.3.5.2 Bed Elevation and Grain Size Distribution and Volume II Appendix F). The specific features of critical habitat and designated Primary Constituent Elements (PCEs) considered essential for the conservation of the SONCC Evolutionarily Significant Units (ESU) that would be adversely impacted in the short term include spawning substrate, water quality, and safe passage conditions (EIR, page 3-289).

However, the Proposed Project includes aquatic resource measures AR-1 (Mainstem Spawning) and AR-2 (Juvenile Outmigration) to reduce the short-term effects of SSCs on coho salmon PCEs of critical habitat. In addition, mitigation measures AQR-1 and AQR-2 (described below), would be required to increase certainty of the effectiveness of the aquatic resource measures AR-1 and AR-2 and to reduce the short-term significant adverse impacts of the Proposed Project on coho salmon critical habitat. Aquatic resource measures submitted as part of the Proposed Project are summarized in Volume I, Section 2.7.8.1 Aquatic Resource Measures and detailed in Appendix B: Definite Plan – Appendix I (EIR, page 3-289).

Mitigation Measure AQR-1 – Mainstem Spawning

Implementation of Action 1 of proposed Aquatic Resource Measure AR-1 (tributary-mainstem connectivity) shall be implemented in the tributaries identified in Action 1 of AR-1, as well as all newly created stream channels that were previously inundated by Project reservoirs prior to drawdown. As described in Volume II Appendix B: Definite Plan – Appendix I, implementation of Action 1 of proposed Aquatic Resource Measure AR-1 would be conducted for at least two years following dam removal, including following a 5-year flow event if the event were to occur within that two years. This mitigation measure (AQR-1) ensures that in addition to the monitoring that shall be conducted as described for AR-1, monitoring shall also be conducted within one month following a 5-year flow event regardless of how many years since dam removal have passed, and if fish passage obstructions are identified, they shall be removed as described in AR-1 (Volume II Appendix B: Definite Plan – Appendix I). In addition, implementation of Action 1 of proposed Aquatic Resource Measure AR-1 shall include an evaluation and proposal of other actions to improve spawning and rearing habitat in tributaries to the Klamath River that meet the spawning targets identified in AR-1, which may include: installation of large woody material, riparian planting for shade coverage, wetland construction or enhancement, and cattle exclusion fencing (EIR, pages 3-291 – 3-292).

Mitigation Measure AQR-2 – Juvenile Outmigration

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

Potential Impact 3.3-4

The State Water Board finds that the Proposed Project would result in potentially significant effects on Chinook and coho salmon Essential Fish Habitat (EFH) quality and quantity due to short-term sediment releases due to dam removal, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that in the short term, under the Proposed Project, Chinook and coho salmon EFH is identical for both species and would be degraded from elevated SSCs and sediment deposition downstream of Iron Gate Dam (see Volume I Section 3.3.5.1 Suspended Sediment and Volume II Appendix E, and Volume I Section 3.3.5.2 Bed Elevation and Grain Size Distribution and Volume II Appendix F). The specific features of EFH that would be adversely impacted in the short term include water quality necessary for successful adult migration and holding, spawning, egg-to-fry survival, fry rearing, smolt migration, and estuarine rearing of juvenile Chinook and coho salmon (EIR, page 3-294).

Based on the wide distribution and use of tributaries by both juvenile and adult Chinook and coho salmon, implementation of the KRRC's proposed aquatic resource measures (AR-1 and AR-2), and implementation of mitigation measures (AQR-1 and AQR-2) described above (where both sets of measures were designed to offset short-term impacts to Chinook and coho salmon EFH), there would not be a substantial decrease in the quality of a large proportion of Chinook and coho salmon EFH in the short term. Therefore, the Proposed Project would have no significant impact on Chinook and coho salmon EFH in the short term (EIR, page 3-294).

Potential Impact 3.3-19 (Anodonta spp.)

The State Water Board finds that the Proposed Project would result in a significant short-term effect on native freshwater mussels (*Anodonta spp.*) due to elevated SSCs during reservoir drawdown and long-term impacts due to elimination of reservoir habitat in the Hydroelectric Reach and relatively stable flow regime in the Middle Klamath River immediately downstream of Iron Gate Dam. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Anodonta spp. would likely be impacted by the Proposed Project due to their close proximity to Iron Gate Dam, and preference for stable flows that currently exist in Lower Klamath Project reservoirs and downstream of Iron Gate Dam. *Anodonta spp.* likely only occurs downstream of Iron Gate Dam under existing conditions as a result of the altered hydrograph (Davis et al. 2013). Under natural conditions they would be unlikely to occur in the mainstem Klamath River. Based on their limited distribution in the mainstem Klamath River, Lower Klamath Project reservoirs, and small presence in the Upper Shasta River, *Anodonta spp.* would likely decline substantially in abundance within the first six months of dam removal as a result of suspended sediment releases. In addition, their habitat would likely substantially decline in quality in the short term. Based on predicted substantial short-term decrease in *Anodonta spp.* abundance of a year class, and substantial decrease in habitat quality, there would be a significant effect to the *Anodonta spp.* population under the Proposed Project in the short term (EIR, page 3-345).

Aquatic resource measure AR-7 is unlikely to off-set impacts to *Anodonta spp.* The areas downstream of the Trinity River confluence planned for relocation do not currently support *Anodonta spp.* and are unlikely to in the future (Davis et al. 2013) (EIR, page 3-345).

Analysis of potential alternatives to the Proposed Project shows that the Partial Removal and No Hatchery alternatives could also result in a significant short-term effect to the *Anodonta spp.* population due to removal of the Iron Gate Dam. Under the Two Dam Removal and Three Dam Removal alternatives, *Anodonta spp.* could be salvaged from the reach downstream of Iron Gate Dam and relocated to J.C. Boyle Reservoir, which does support suitable *Anodonta spp.* habitat. Therefore, with aquatic resource measure AR-7, there would likely not be a substantial reduction in the abundance of *Anodonta spp.* species in the short term, and impacts would be not significant with for *Anodonta spp.* in the short term for these two alternatives. However, Two Dam Removal and Three Dam Removal alternatives would result in fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these two alternatives are not environmentally superior.

The No Project and Continued Operations with Fish Passage alternatives would not impact the *Anodonta spp.* population because these alternatives would not remove the Iron Gate Dam. However, the No Project Alternative would not have any of the benefits of the Proposed Project and would not meet the project's restoration purpose and

objectives. The Continued Operations with Fish Passage Alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the project's restoration purpose and objectives, and so these two alternatives are not environmentally superior.

Potential Impact 3.3-23

The effect of reduced instream flows in Bogus Creek under the Proposed Project would not be significant in the short- and long-term. However, mitigation was included to further reduce the potential for short- and long-term effects of reduced instream flows in lower Bogus Creek under the Proposed Project on anadromous salmon by increasing certainty that fish passage conditions are protected. The State Water Board finds that the Proposed Project could potentially affect anadromous salmonid populations due to short-term Bogus Creek flow diversions for the Iron Gate Hatchery, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that based on the potential for low flows (i.e., less than 4.5 cfs) in the Bypass Reach during the salmonid migration periods in some years (which could result in delayed migration and increased crowding), the uncertainty in the migration flow levels in Bogus Creek, and the uncertainty in the commitment to ensure flows to protect anadromous salmon volitional migration, the flow diversions from Bogus Creek could decrease the abundance of multiple (up to eight) year classes of anadromous salmonids produced from spawning activity in Bogus Creek. However, it is anticipated that this would only occur infrequently during some dry water years, and only a small portion of the fall-run migration would potentially be affected. Based on the less than substantial decrease in abundance of a year class and habitat quality that could occur under the Proposed Project in the short- and long-term, the effect of reduced instream flows in Bogus Creek under the Proposed Project would not be significant in the short- and long-term (EIR, page 3-352).

Mitigation Measure AQR-3 would even further reduce the potential for short- and long-term effects of reduced instream flows in lower Bogus Creek under the Proposed Project on anadromous salmon by increasing certainty that fish passage conditions are projected (EIR, page 3-352).

Mitigation Measure AQR-3 – Bogus Creek Flow Diversions

Implementation of Iron Gate Hatchery operations plan (Described in Appendix B: Definite Plan – Section 7.8.3) shall include a minimum flow in Bogus Creek of 4.5 cfs, unless a study is conducted that determines an alternative minimum flow is required to provide volitional fish migration for Chinook salmon, coho salmon, and steelhead. If the hatchery diversions cause a flow within Bogus Creek downstream of the bypass that is less than 4.5 cfs (or the minimum flow identified for each species during their migration period), then hatchery operations shall be adjusted, in coordination with NMFS and

CDFW, to reduce the percentage of flow diverted from Bogus Creek to be protective of anadromous fish passage.

Statement of Overriding Considerations

Potential Impact 3.3-19 (Anodonta spp.)

As indicated above, the Proposed Project would result in a significant short-term effect on native freshwater mussels (*Anodonta spp.*) due to elevated SSCs during reservoir drawdown and long-term impacts due to elimination of reservoir habitat in the Hydroelectric Reach and relatively stable flow regime in the Middle Klamath River immediately downstream of Iron Gate Dam. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on native freshwater mussels (*Anodonta spp.*).

Beneficial effects of the Proposed Project on aquatic resources include long-term beneficial effects on coho salmon critical habitat quality and quantity; long-term beneficial effects on Chinook and coho salmon Essential Fish Habitat (EFH) quality and quantity; long-term beneficial effects on fall-run and spring-run Chinook salmon, coho salmon, steelhead, Pacific lamprey, and redband trout populations due to increased habitat quality and quantity; short-term and long-term beneficial effects on species interactions between introduced resident fish species and native aquatic species due to short- and long-term changes in habitat quality and quantity; and long-term beneficial effects on benthic macroinvertebrate habitat quality.

The long-term benefits of the Proposed Project on aquatic resources support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts to *Anodonta, spp.*

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause significant and unmitigable impacts to *Anodonta, spp* in the short and long term. The Proposed Project aims to restore the Klamath River to a more natural riverine condition, with significant benefits to aquatic species as described above. The State Water Board has determined that, the aquatic resources benefits of the Proposed Project outweigh the significant and unavoidable impacts on *Anodonta, spp*, and the impact is therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Phytoplankton and Periphyton

Overview

As noted above, the Proposed Project is a restoration project with an (underlying) purpose which includes timely water quality improvements related to the Lower Klamath

Project. Objectives of the Proposed Project include improvement of the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to cyanobacteria and associated toxins, water temperature, and levels of biostimulatory nutrients and amelioration of conditions underlying high disease rates among Klamath River salmonids.

Components of the Proposed Project could have a significant effect on the phytoplankton and periphyton communities in the Klamath River. For example, Periphyton growth in low-gradient channel margin areas in the Hydroelectric Reach could increase on a seasonal basis following dam removal because removal of the reservoirs and elimination of hydropower operations in the J.C. Boyle Peaking Reach would provide additional low-gradient habitat suitable for periphyton assemblages, including potentially nuisance periphyton. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The EIR examines the potential effect of the Proposed Project on phytoplankton and periphyton communities in the Klamath River. As discussed in detail in Section 3.4 of the EIR, the State Water Board concludes that Potential Impacts 3.4-1, 3.4-2, 3.4-3, 3.4-4 (Hydroelectric Reach from the Oregon-California state line to Copco No. 1 Reservoir), and 3.4-5 will either not be significant or will be beneficial. Beneficial effects of the Proposed Project are long-term changes in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect to phytoplankton and periphyton communities is set out below.

CEQA Findings

Potential Impact 3.4-4 (Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam)

The State Water Board finds that the Proposed Project would result in alterations in the growth of nuisance periphyton species in the Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam) that would be significant due to increased nutrients and available low-gradient channel margin habitat formed by conversion of the reservoir areas to a free-flowing river and the elimination of hydropower peaking operations. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that Periphyton growth in low-gradient channel margin areas in the Hydroelectric Reach could increase on a seasonal basis following dam removal because removal of the reservoirs and elimination of hydropower operations in the J.C.

Boyle Peaking Reach would provide additional low-gradient habitat suitable for periphyton assemblages (EIR, page 3-435).

Periphyton are a natural component of river ecology and they are an important element of aquatic food webs. The establishment and growth of periphyton, including nuisance periphyton species, along the margins of the newly created low gradient river channel is a natural process. While processes that influence periphyton establishment and growth have been identified (e.g., light availability, nutrient availability, water temperature, seasonal flow variations, sediment transport), variations in these processes within the Hydroelectric Reach of the Klamath River after dam removal would not completely prevent the natural potential for growth of nuisance periphyton species along the margins of the newly created low gradient river channels. In the reservoir areas of the Hydroelectric Reach that would become the newly created low gradient habitat, there is no periphyton since it is not suitable habitat.

The overall effect of the Proposed Project would likely be to increase periphyton in the margins of low gradient portions of Copco No. 1 and Iron Gate reservoir footprints due to the creation of new, previously uncolonized low gradient river channels. While there is considerable uncertainty, there is the potential under the Proposed Project that nuisance periphyton species could be part of the periphyton assemblages that grow in the margins of these new low gradient river channels. The nuisance periphyton species would potentially provide habitat for the polychaete worm (*Manayunkia speciose*) that is the intermediate host of the fish parasites *Ceratomyxa shasta* and *Parvicapsula minibicornis*. As a result, the short-term and the long-term increase in growth of nuisance periphyton species due to increases in available habitat along channel margin areas of the Hydroelectric Reach within the Copco No. 1 and Iron Gate reservoir footprints also would potentially result in a new or further impairment of designated beneficial uses in this reach, and would therefore be a significant impact. No mitigation measure would eliminate the potential for natural establishment and growth of periphyton or specifically nuisance periphyton within these areas. Accordingly, there are no mitigation measures that can be proposed to significantly avoid or minimize this impact and reduce the impact to less than significant (EIR, page 3-436).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in periphyton assemblages that grow in the margins of these new low gradient river channels.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no short-term increases in sediment-associated nutrients that could potentially stimulate nuisance periphyton growth in the Hydroelectric Reach, Middle and Lower Klamath River, or the Klamath River Estuary. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the

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

Statement of Overriding Considerations

Potential Impact 3.4-4 (Hydroelectric Reach from Copco No. 1 Reservoir to Iron Gate Dam)

As indicated above, the Proposed Project would result in alterations in the growth of nuisance periphyton species in the Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam) that would be significant due to increased nutrients and available low-gradient channel margin habitat formed by conversion of the reservoir areas to a free-flowing river and the elimination of hydropower peaking operations. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact associated with periphyton assemblages.

Beneficial effects of the Proposed Project on periphyton and phytoplankton include long-term change in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary. Additionally, the Proposed Project would significantly reduce algal toxins, as discussed under Water Quality, above. The long-term benefits of the Proposed Project on phytoplankton throughout the California reaches of the Klamath River support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated with periphyton assemblages Hydroelectric Reach (from Copco No. 1 Reservoir to Iron Gate Dam).

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause significant and unmitigable impacts to periphyton assemblages in the reaches of the Klamath River from Copco No. 1 Reservoir to Iron Gate Dam, as noted above. The State Water Board further notes the anticipated benefits of the Proposed Project on the existing harmful phytoplankton conditions throughout the reaches of the Klamath River in California, as noted above. The State Water Board finds that the improvements in periphyton conditions outweigh the significant and unmitigable impact to periphyton, and that the impact is therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Terrestrial Resources

Overview

As noted above, the Proposed Project is a restoration project that will remove four hydroelectric facilities (and their associated reservoirs), converting the area to a free-flowing river. The Proposed Project incorporates restoration of the newly-exposed reservoir beds. Construction activities associated with the Proposed Project could have a significant effect on terrestrial resources. Examples of Proposed Project construction activities that have the potential to affect terrestrial resources include, upgrading haul routes/bridges; establishments of disposal sites; improvements to water supply pipeline, modifications to hatcheries, and removing four 69-kV transmission lines, recreation structures (i.e., Mallard Cove and Copco Cove), dam, penstocks, spillway gates, decks, piers, powerhouse intake structure, gate houses on right abutment, diversion control structure, powerhouse, switchyard, warehouse, and operator residence (see also Table 2.7-3 and Figure 2.7-2).

The EIR examines the potential effect of the Proposed Project on terrestrial resources. As discussed in detail in Section 3.5 of the EIR, the State Water Board concludes that Potential Impacts 3.5-2, 3.5-3, 3.5-4, 3.5-5, 3.5-6 (long-term), 3.5-7 (rare natural communities), 3.5-9, 3.5-12 (long-term), 3.5-15, 3.5-16 (Pacific tailed frog, southern torrent salamander, northern red-legged frog, western pond turtle, and all special-status amphibians and reptiles), 3.5-17, 3.5-18, 3.5-19, 3.5-20, 3.5-21, 3.5-23, 3.5-24, 3.5-25, 3.5-27, 3.5-29, and 3.5-30 will either not be significant or will be beneficial. The Proposed Project would result in several long-term beneficial effects on the following terrestrial resources: riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; benthic macroinvertebrates due to increased habitat availability and improved habitat quality; deer from an increase in winter range habitat; rare natural communities, wetlands, and riparian vegetation from herbicide use during reservoir restoration that would improve habitat conditions by reducing competition from invasive species; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams.

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

CEQA Findings

Potential Impact 3.5-1

The State Water Board finds that the Proposed Project would result in construction-related impacts on wetland and riparian vegetation communities, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that disturbances associated with construction areas, disposal sites, and haul roads where clearing, grading, and staging of equipment would occur could have short-term impacts on sensitive habitats, including wetlands and riparian habitats along reservoirs and river reaches. For example, heavy machinery traversing wetland and riparian areas could change local topography and impact wetland and riparian vegetation and could degrade plant community conditions. The Proposed Project identifies a number of pre-construction measures to reduce impacts on wetland and riparian habitats (Estuarine, Montane Riparian, Palustrine, and Wet Meadow) habitats including a wetland delineation within the limits of construction, conducted in 2019 that identified wetland areas that it was feasible to completely avoid through fencing, as well as those for which it would not be possible to completely avoid through fencing (with any disturbance limited to less than .5 acres per site). The results of the wetland delineation were to be incorporated into the Proposed Project design to avoid and minimize direct impacts on wetlands to the maximum extent feasible, and wetland areas adjacent to the construction Limits of Work would be fenced to prevent inadvertent entry, as possible. There could be impacts on wetlands if the fencing does not include an appropriate buffer (i.e., a prescribed distance from the edge of the wetland in which construction activities are prohibited); however, with implementation of Mitigation Measure TER-1, short and long-term impacts on wetland communities would be reduced to less than significant (EIR, Vol. III, pages AT1-680 – AT1-683).

In addition, construction best management practices (Volume II Appendix B: Definite Plan – Appendix J) to reduce potential impacts on water quality in wetlands and other survey waters during construction and implementation of Mitigation Measure WQ-1, as described above in Potential Impact 3.2-4, would reduce potential impacts on wetlands to less than significant.

The Reservoir Area Management Plan (Volume II Appendix B: Definite Plan – Appendix H) includes details for the installation of native plants and aerial, barge, or hand seeding in appropriate areas to re-vegetate all areas disturbed, including in the reservoir footprint. The anticipated gains in wetland and riparian acreage are anticipated to considerably exceed a 1:1 replacement ratio for wetland acreage, resulting in no net loss of wetlands, even for those areas for which disturbance through fencing is not feasible and for limited areas not yet delineated that may have reductions in riparian or wetland acreage due to changes in the 100 year floodplain downstream of Iron Gate Dam.).

Mitigation Measure TER-1 Establish a 20-foot buffer around delineated wetlands

The KRRC shall establish a minimum of a 20-foot buffer around all delineated wetlands potentially affected by construction impacts to ensure there will not be any significant environmental impacts to wetlands by deterring heavy machinery from traversing the wetland and preventing runoff pollution from directly entering the wetland where doing so would not result in a significant environmental impact. The buffer may be adjusted (e.g., made larger or smaller) based on site-specific conditions, as determined by a qualified biologist acceptable to USACE, as necessary to ensure adequate protection of the delineated wetlands. The State Water Board has the authority to include this mitigation measure in its water quality certification for the project, and the measure is therefore feasible and used in the EIR analysis to make a significance determination.

Potential Impact 3.5-6 (short-term)

The State Water Board finds that the Proposed Project would result in short-term impacts on culturally significant species in riparian and wetland habitats, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that many of the species identified by the Native American Tribes in the Klamath River region as culturally significant occur in riparian and wetland habitats. Project activities including construction as well as reservoir drawdown would result in population-level impacts to culturally significant plant species or substantial degradation or removal of wetland and riparian habitat; therefore, there would be a significant short-term impact on culturally significant species (EIR, page 3-524).

The Proposed Project includes several actions to survey for wetlands and encourage rapid revegetation with native riparian species in the reservoir footprints as defined in the Reservoir Area Management Plan (Appendix B: Definite Plan – Appendix H) that would ensure no net loss of wetland or riparian habitat acreage and functions. The revegetation mixes are developed based on updated inventories of existing wetland and riparian vegetation around the reservoir perimeters; therefore, culturally significant species will be documented and incorporated as part of the revegetation effort. In addition, Mitigation Measure TER-1, as described above, includes wetland buffers to prevent intrusion in wetland habitats, deter heavy machinery from traversing the wetland, prevent runoff pollution from directly entering the wetland, and avoid substantial degradation in these areas. These measures would ensure that impacts on culturally significant species would be less than significant (EIR, page 3-524).

Potential Impact 3.5-7

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term impacts on special-status plants from construction-

related activities within the Limits of Work and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that construction activities including road, bridge, hatchery modifications, and culvert improvements (Section 3.22.2.3 Road Conditions) could result in direct mortality or damage to special-status plant species or indirect damage by degrading special-status plant habitat (e.g., introducing invasive plant species). Special-status plant species with the potential to occur in the Primary Area of Analysis for terrestrial resources are provided in Volume I, Table 3.5-4. As part of the Proposed Project, comprehensive floristic surveys would be conducted for special status-plants within the construction Limits of Work where ground-disturbing activities would occur plus an established buffer (i.e., a 100-meter buffer around disposal sites and a 10-meter buffer along access and haul roads) following the CDFW guidelines (CDFG 2009; Appendix B: Definite Plan – Appendix J) and the vegetation maps would be updated to reflect existing conditions including any rare natural communities that may present (EIR, pages 3-524 and 3-525).

If any special-status plants are documented, the Proposed Project design would be modified to avoid them, if possible. Where avoidance is not feasible, a combination of relocation, propagation, and establishment of new populations in designated conservation areas would be implemented, as determined in coordination with the resource agencies and invasive plant species would be controlled by implementing measures such as routine washing of construction vehicles and equipment (Volume II Appendix B: Definite Plan – Appendix J). There may be significant impacts on special-status plants where avoidance is infeasible and if replanting does not succeed in re-establishment of new populations at a 1:1 ratio such that there is no net loss of individuals. If implemented as part of the Final Restoration Plan, Recommended Terrestrial Measure 1 would reduce impacts to less than significant (EIR, page 3-525).

Overseeing development and implementation of terms and conditions relating to protection of terrestrial special-status plants and/or rare natural communities does not fall within the scope of the State Water Board's water quality certification authority. Because the State Water Board cannot ensure implementation of the terrestrial aspects of the Final Restoration Plan, it finds this impact as significant and unavoidable (EIR, page 3-525).

Recommended Terrestrial Measure 1 – Establish Mitigation Ratios for Special-Status Plants

The Final Restoration Plan shall include a minimum 1:1 mitigation ratio and a Plant Mitigation and Monitoring Plan shall be developed for any special-status species that would be impacted by the Proposed Project. These features of Recommended Terrestrial Measure 1 would be implemented such that any impact to special-status plants would be less than significant (EIR, page 3-525).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on special-status plants and rare natural communities as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, special-status plants and rare natural communities may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no short-term impacts on special-status plants and rare natural communities. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-8

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term and long-term impacts on special-status wetland plants surrounding the reservoirs due to removal of Copco No. 1, Copco No. 2, and Iron Gate reservoirs and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that wetland habitat at reservoir margins supports potential habitat for several species of special-status plants (Volume I Table 3.5-4). There is potential for special-status plants to occur at the Lower Klamath Project reservoirs, and therefore there would be loss of habitat for these individual plants once the reservoirs are removed (EIR, page 3-526).

Implementation of the Proposed Project is projected to result in a net increase in the areal extent of riparian and wetland habitat within the Primary Area of Analysis, largely as part of natural recruitment along newly-exposed mainstem river channel riparian corridors within the former reservoir footprints, but also as a result of active restoration management as described in the Reservoir Area Management Plan (Volume II Appendix B: Definite Plan – Appendix H). The Reservoir Area Management Plan also includes focused surveys (i.e., the species listed in Volume I Table 3.5-1, Preliminary List of Special Status Plants with Potential to Occur in or near the Limits of Work) for special-status plants in areas such as reservoir shorelines where changes in hydrology and geomorphology will occur due to the Proposed Project and includes provisions for

the establishment of special-status plants, if any are documented within these areas (EIR, page 3-526).

There would be significant impacts on special-status plants if those plants are not captured during the targeted surveys and also where avoidance of documented and undocumented special-status plants is infeasible and replanting does not succeed in re-establishment of new populations. If implemented, Recommended Terrestrial Measure 2 and Recommended Terrestrial Measure 1 would reduce impacts to less than significant. However, because the State Water Board cannot ensure implementation of the terrestrial aspects of the Final Restoration Plan, it finds this impact as significant and unavoidable (EIR, page 3-526).

Recommended Terrestrial Measure 2 – Update Scoping Lists for Special-Status Plants.

The Final Restoration Plan shall include an updated list of special-status plants with the potential to occur in wetland and riparian habitats.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in significant impacts on special-status plants.

Under the Continued Operations with Fish Passage Alternative and No Project alternatives, there would be no impact on wetland and riparian vegetation resulting from short- or long-term habitat loss or gain as compared with existing conditions, since reservoir drawdown and dam removal activities would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-10 (amphibians, reptiles, and gray wolf)

The State Water Board finds that the Proposed Project would result in short-term impacts on special-status amphibians, reptiles, and mammals (gray wolf) from construction-related activities within the Limits of Work, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that construction activities including, but not limited to, structure demolition; hatchery modifications (Section 2.7.6 Hatchery Operations); road, bridge, and culvert improvements (Section 3.22.2.3 Road Conditions); and, use of heavy equipment to transport sediment during reservoir drawdown or to grade floodplain areas to support wetland and restoration of natural habitats (Appendix B: Definite Plan – Appendix H), could result in direct mortality or harm to special-status amphibian, reptile,

and mammal species or associated habitat with the potential to occur in the Primary Area of Analysis for terrestrial resources (see Table 3.5-5 for the list of species). Construction activities that may affect habitat, result in direct contact to individuals, or result in indirect impacts on individuals, include demolition of structures, digging holes or trenches where wildlife may be trapped, and movement of heavy machinery through construction areas, staging areas, and along haul roads where these species could occur (EIR, page 3-527).

The aforementioned short-term construction-related activities would result in a significant impact on special-status amphibians, reptiles, and mammals, if present during construction. The Proposed Project includes multiple components to avoid and minimize construction-related impacts on wildlife species including (additional details are provided in Volume II Appendix B: Definite Plan Appendix J – Terrestrial Resource Measures) (EIR, page 3-528).

While the Proposed Project avoidance and minimization measures would reduce the potential for short-term construction-related impacts on wildlife species within the Primary Area of Analysis, several of the components need more specificity to ensure that short-term construction activities would not result in significant impacts on special-status species amphibians, reptiles, and mammals (gray wolf) or substantially interfere with movement and/or migration of these species, or that any remaining potentially significant impacts are mitigated to the extent feasible. Implementation of the mitigation measures TER-2, TER-3, and TER-6, developed in consultation with CDFW and USFWS, would reduce potential short-term construction-related impacts on special-status amphibian and reptiles, and gray wolf to less than significant (EIR, page 3-529).

Overseeing development and implementation of terms and conditions relating to protection of terrestrial wildlife species does not fall within the scope of the State Water Board's water quality certification authority unless the species has a particular nexus with water – for example, it is a wetland or riparian species or primarily eats fish. In this case, there are mitigation measures pertaining to amphibian, and reptiles, and bald eagle that the State Water Board can ensure through the water quality certification. Mitigation measures are also assured for federally listed and federally protected species (gray wolf, bald eagle, and golden eagle) through applicable permitting processes under the Endangered Species Act and the Bald and Golden Eagle Protection Act. Therefore, with implementation of these mitigation measures (TER-2, TER-3, and TER-6) impacts on special-status amphibian and reptiles, and gray wolf would be less than significant (Volume III Attachment 1 pages AT1-687 to AT1-695).

Mitigation Measure TER-2 – Amphibian and Reptile Management

As described in the Draft Clean Water Act Section 401 Water Quality Certification for California Condition 15 Amphibian and Reptile Management, no later than three months following issuance of a FERC license surrender order, KRRC shall submit an Amphibian and Reptile Rescue and Relocation Plan (Amphibian and Reptile Plan) to the State

Water Board Deputy Director for review and approval prior to drawdown, in-water work, and work in riparian areas. The Amphibian and Reptile Plan shall identify protection measures that when implemented by KRRC will avoid direct mortality or harm to special-status amphibian and reptile species with the potential to occur in the Primary Area of Analysis for terrestrial resources. The Amphibian and Reptile Plan shall also specify survey protocols, locations, and frequency; rescue and relocation techniques; and reporting requirements. Species covered in the Amphibian and Reptile Plan shall include amphibians and reptiles found within the terrestrial Primary Area of Analysis that are listed under the federal ESA or the CESA or are designated as Species of Special Concern by CDFW. These species may include, but are not limited to: southern torrent salamander, Scott Bar salamander, Siskiyou Mountains salamander, Pacific tailed frog, foothill yellow-legged frog, northern red-legged frog, and western pond turtle. These features of TER-2 will be implemented such that there is no significant impact on special-status amphibians and reptiles (EIR, page 3-530).

Mitigation Measure TER-3 – Western Pond Turtle Pre-Construction Surveys

As described in the Draft Clean Water Act Section 401 Water Quality Certification for California Condition 15 Amphibian and Reptile Management, KRRC shall protect western pond turtle, which has been designated by CDFW as a Species of Special Concern and is present within the Primary Area of Analysis.

KRRC shall conduct western pond turtle pre-construction surveys and reporting, as described below. An on-site biologist approved by the applicable agencies to specifically conduct western pond turtle pre-construction surveys shall be familiar with the ecology of western pond turtle. This on-site biologist shall conduct pre-construction surveys immediately prior to the start of any in-water work each day that in-water work will occur. Any adult western pond turtles that are found during surveys shall be relocated to a safe location, by an agency-approved biologist, outside of the work area and away from indirect impacts. An appropriate relocation site shall be designated prior to the start of construction. Pre-construction surveys shall be consistent with the Amphibian and Reptile Management Plan (TER-2). (This measure is specific to construction activities, such as cofferdams, and is not intended to be implemented during reservoir drawdown.)

A report shall be submitted to applicable agencies within 30 days of completing the Proposed Project. The report shall include the following information regarding all species handled and relocated; location, date, time and duration of the handling; enumeration and identification of species handled; identification of species life stage; identification of capture personnel; the release location and time; stream, transport, and receiving water temperatures; and location, date, and time of release. These features of TER-3 will be implemented such that there is no significant impact on western pond turtles (EIR, pages 3-530 and 3-531).

Mitigation Measure TER-6 – Gray Wolf

Consistent with the direction of the USFWS, every six months, the location of gray wolves shall be assessed using the CDFW gray wolf activity map (CDFW 2018a) and direct communication with the CDFW wolf biologist. If the Lower Klamath Project overlaps with known wolf activity as identified in the CDFW wolf activity map or if a wolf is documented during any Proposed Project surveys or monitoring, CDFW shall be contacted to further determine if activities pose any potential impacts on gray wolves, particularly with respect to potential modification or disruption of key pup-rearing areas such as dens and rendezvous sites. Depending on the time of year and information about the pack or individuals in the area, CDFW may identify additional measures including denning surveys, reduced driving speeds, limited operating periods, disturbance buffers, reduced speed and signage on haul roads, modification of haul roads to avoid key areas, and monitoring. Consistent with USFWS guidance, limiting operating periods (for loud, continuous noise, or smoke) will be implemented within one mile of den or rendezvous sites during the critical breeding and pup-rearing period or within a mile of potential areas that could support denning and rendezvous sites, as based on habitat conditions such as perennial water availability, dry and wet meadows, and distance to roads). Tracking of gray wolf activities shall be reported every six months to applicable agencies (Volume III, Attachment 1, pages AT1-691 to AT1-692).

Potential Impact 3.5-10 (bats and American badger)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on special-status mammals (bats and American badger) from construction-related activities within the Limits of Work and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The aforementioned short-term construction-related activities, discussed under Impact 3.5-10 (amphibians, reptiles, and gray wolf), would result in a significant impact on special-status amphibians, reptiles, and mammals, if present during construction. The Proposed Project includes multiple components to avoid and minimize construction-related impacts on wildlife species including (additional details are provided in Volume II Appendix B: Definite Plan Appendix J – Terrestrial Resource Measures) (EIR, page 3-528).

It would be appropriate for the recommended terms and conditions relating to protection of terrestrial wildlife species other than amphibians, reptiles and gray wolf to include the Recommended Terrestrial Measures below, which have been developed in consultation with CDFW and USFWS. The Recommended Terrestrial Measures include additional components beyond those listed as part of the Proposed Project and would be necessary to reduce potential short-term construction-related impacts on special-status to less than significant, as specifically discussed in each measure (see EIR, Table 3.5-6 and the measures themselves) (EIR, page 3-529).

The State Water Board anticipates that implementation of the final terms and conditions, including the Recommended Terrestrial Measures, and any modifications developed through the FERC process that provide the same or better level of protection for special-status wildlife, would reduce impacts to less than significant. However, because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds the associated impacts to mammals to be significant and unavoidable.

Recommended Terrestrial Measure 3 – On-site Biologist/Construction Monitoring Plan

The Construction Monitoring Plan, as referenced in KRRC's Definite Plan (Appendix B: Appendix J – Terrestrial Resource Measures) shall be developed prior to implementing construction (ground disturbing activities) and include where and when monitoring would occur, requirements and roles of an on-site biologist, resource monitored, and reporting requirements. The Construction Monitoring plan details would include the information below.

An on-site biologist (often referred to as a biological monitor or construction monitor) shall be present during construction-related activities to reduce the potential for impacts on special-status wildlife species and nesting birds that are protected by CDFW and USFWS. The role of the on-site biologist shall include, but is not limited to, identifying wildlife species within or adjacent to the work area that may be affected; clearing each work area daily (including individual areas such as each staging area, structure demolition area, bridge upgrade location) of wildlife species prior to the initiation of an activity (as discussed in Recommended Terrestrial Measure 7); observing changes in wildlife behavior; identifying species if they enter the work area and relocating them to a designated location identified prior to Proposed Project activities; developing site- and species-specific minimization measures to prevent impacts on special-status species or sensitive habitats and advising crew of these minimization measures which could include stopping work until the wildlife was no longer in the work area or implementing buffers; communicating daily at tailboards with the construction crew about special-status wildlife activity in the area; and coordinating with agencies for guidance, as needed. The on-site biologist has stop-work authority for any activity in order to avoid unauthorized take of a special-status species.

The on-site biologist shall be knowledgeable and experienced in the biology, natural history, collecting, and handling of species that may be encountered. CDFW and USFWS must approve the on-site biologist's qualifications prior to start of construction; such approval shall occur within a timely fashion.

During any construction-related (i.e., staging, facility removal, restoration) activity, the on-site biologist shall be present at locations where the activity is occurring. A minimum of one on-site biologist shall be present at each earth-moving or structure demolition location (e.g., dam location, staging area, bridge upgrade). It would be reasonable to

assume, depending on the level of proposed activity, one biologist can monitor areas that are immediately adjacent to each other. This measure is specific to construction activities and is not intended to be implemented during reservoir drawdown.

The on-site biologist shall prepare daily written observation and inspection records that summarize observed special-status species and minimization measures employed. These records shall be submitted at least monthly to CDFW, USFWS, and the State Water Board. The on-site biologist shall submit all observations of state species of special concern and candidate, threatened, or endangered species under the state or federal Endangered Species Act (ESA), to the California Natural Diversity Database within 60 calendar days of the observation, and copies of the submitted forms shall be included with the monthly report.

If a species of special concern, candidate, threatened, or endangered species is harmed by the Proposed Project, or found dead within the Limits of Work, initial notification to the respective resource agencies shall include information regarding the location, species, and number of animals taken or injured with 24 hours of discovery. Following initial notification, a written report shall be provided to the respective resource agencies within two calendar days and shall include any additional measures to implement for the duration of the Proposed Project to avoid additional injury to species of special concern, candidate, threatened, or endangered species. The report format shall be developed in coordination with CDFW and shall include the date and time of the finding or incident, the location of the animal or carcass, a photograph (if possible), an explanation as to cause of harm, and any other pertinent information. If the incident was a result of the Proposed Project, the report will include a recommendation that would be implemented in order to avoid additional injury to special-status species of special concern, candidate, proposed, threatened, or endangered species (EIR, pages 3-532 and 3-533).

Recommended Terrestrial Measure 4 – Biological Resources Education and Awareness Training

A mandatory biological resource education and awareness training shall be provided by a biologist approved by the resource agencies (USFWS and CDFW) for all on-site Proposed Project personnel and their associated supervisor. All persons shall receive the training prior to performing any ground-disturbing (including vegetation clearing and grading) work. This training shall inform Proposed Project personnel about special-status species that could occur on site. The training shall, at a minimum, consist of: (1) a brief introduction to the special-status species and identifying characteristics, including a short discussion of the biology, life history, habitat requirements, status, and legal protection; (2) measures being taken for the protection of these species and their habitats; and (3) actions to be taken if a special-status species is found within the area during construction activities. Species identification cards shall be issued to shift supervisors; these cards shall have photos, descriptions, and actions to be taken upon sighting of special-status species during construction. The training shall also include

information on exotic and noxious species and appropriate decontamination measures. This training shall be repeated at least once annually and shall be provided to any new Proposed Personnel before beginning work activities, and if a change in special-status species occurs that requires further consideration. The KRRC shall provide interpretation for non-English speaking workers. Training Proposed Project personnel on special-status species will increase the potential of documenting special-status species in the construction area and allow for the on-site biologist to implement measures (e.g., rescue and relocate, implement buffers) to reduce impacts on the species to less than significant. Upon completion of the training, all employees shall sign an acknowledgment form stating that they attended the training and understand all protection measures. Tracking of training activities shall be reported monthly to applicable agencies (EIR, page 3-533).

Recommended Terrestrial Measure 5 – Requirements for Construction Personnel

Establishing requirements for construction personnel will reduce the potential impacts on special-status terrestrial resources to less than significant by ensuring construction activities are occurring within designated boundaries and reducing the potential for wildlife to enter the work area or be affected by equipment. These requirements are described below.

- The KRRC shall clearly delineate the Limits of Work and prohibit any construction-related traffic outside of these boundaries.
- KRRC shall require construction crews to maintain a 20 mile per hour speed limit on all unpaved roads to reduce the chance of wildlife being struck.
- KRRC shall require that no deliberate feeding of wildlife shall be allowed and all food-related trash items shall be disposed of in closed wildlife-proof containers (e.g., bear-proof trash cans) and removed at least once a week.
- If vehicle or equipment maintenance is necessary, it shall be performed in the designated staging areas with adequate spill containment.
- Any worker who inadvertently injures or kills a federally or state-listed species, bald eagle, or golden eagle, or finds one dead, injured, or entrapped shall be required to immediately report the incident to the construction supervisor and on-site biologist. The on-site biologist shall notify the resource agencies within 24 hours of the incident.
- All equipment shall be power-washed prior to arriving to and leaving the site to minimize the spread of non-native wildlife and exotic and noxious plants species to reduce the chance of impacts on special-status species and their habitats.
- Tracking of these requirements shall be reported monthly to applicable agencies (EIR, Vol. I, pages 3-533 and 3-534).

Recommended Terrestrial Measure 6 – Wildlife Exclusion and Entrapment

Construction areas, including staging areas and access routes, shall be fenced with high-visibility fencing to demarcate work areas to reduce the potential for terrestrial species to enter the work area and be harmed by construction equipment. An on-site biologist (see Recommended Terrestrial Measure 3) shall confirm the location of the fenced area prior to habitat clearing, and the fencing shall be maintained throughout the construction period and checked daily when active construction is occurring to ensure that it remains secure and intact and that no wildlife are trapped by the fencing. Additional exclusion fencing or other appropriate measures shall be implemented in consultation with the resource agencies if necessary to prevent use of construction areas by special-status species during construction. Installing visible construction fencing does not apply to the reservoir areas during drawdown or areas being restored with planting of vegetation, but rather staging and active construction areas.

To prevent entrapment of wildlife at construction sites, all excavated, steep-walled holes or trenches in excess of two feet deep shall be inspected by a biologist or construction personnel approved by the resource agencies at the start and end of each working day. If no animals are present during the evening inspection, plywood or similar materials shall be used to immediately cover the trench, or one or more escape ramps shall be set in the trench at no greater than 1,000-foot intervals and constructed of earth fill or wooden planks. Trenches and pipes shall be inspected for entrapped wildlife each morning prior to onset of activity. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before activities resume, or removed from the trench or hole by the biologist and the animals shall be allowed to escape unimpeded.

Tracking of wildlife exclusion and entrapment activities shall be reported monthly to applicable agencies. Should wildlife be found entrapped, the on-site biologist shall identify if modifying construction or monitoring activities would reduce potential for future impacts and implement as feasible to prevent mortality of special-status species (EIR, pages 3-534 and 3-535).

Recommended Terrestrial Measure 7 – General Special-status Wildlife Surveys and Pre-construction Surveys

A general special-status wildlife survey shall be conducted within 24 months of initial habitat modification associated with construction activities (e.g., grubbing, structure modification) within the Limits of Work to assess the presence of any special-status species and potential for habitat to be present that could support special-status species identified in Table 3.5-5. Surveys shall be conducted by a qualified biologist; such approval shall occur in a timely fashion. If suitable habitat is present, and there is potential for special-status species to be present, a biologist shall further assess if these special-status species are present in the Limits of Work by conducting general visual

observation surveys or protocol-level surveys. Surveys for nesting birds are discussed in Recommended Terrestrial Measure 9, willow flycatcher in Recommended Terrestrial Measure 10, bald and golden eagle in Mitigation Measure TER-7, bats in Recommended Terrestrial Measure 12; surveys to be consistent with the Amphibian and Reptile Management Plan discussed in Mitigation Measure TER-2.

Pre-construction surveys shall be conducted daily by the on-site biologist (as identified in Recommended Terrestrial Measure 3) at each location where construction is occurring prior to initiation of construction. If special-status species are present (excluding state or federally listed as threatened, endangered, or candidate species), they shall be captured and relocated out of harm's way to a suitable area designated prior to initiating the Proposed Project activities that have the potential to affect the species, in a way that is consistent with recommended measures for bats (Recommended Terrestrial Measure 12) and Mitigation Measures for western pond turtle pre-construction surveys (TER-4) and the Amphibian and Reptile Management Plan (TER-2). General special-status wildlife surveys and pre-construction surveys shall be reported monthly to applicable agencies (EIR, page 3-535).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on mammals as the Proposed Project, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no short-term impacts on mammals. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-11

The State Water Board finds that the Proposed Project would result in significant short-term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Section 2.7.6 Hatchery Operations), road and bridge upgrades (as discussed in Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Section 3.22.2.3 Road Conditions) could result in disturbance to or mortality of nesting birds. Potential impacts on native birds during the breeding season, including several special-status species, many of which are

referenced in Volume I Table 3.5-5, could occur under the Proposed Project including species such as peregrine falcon and non-special-status species such as swallows (northern rough-winged, tree, violet-green) (eBird 2018). Potential impacts could result from nest abandonment due to construction noise above ambient conditions, as well as habitat removal resulting from construction activities or physical harm (EIR, page 3-536).

The Proposed Project includes multiple components to avoid and minimize short-term construction-related impacts on bird species (Volume II Appendix B: Definite Plan – Appendix J) which include, but are not limited to, implementing pre-construction bird surveys, removing nesting habitat for specific bird species prior to the bird nesting season, and removing vegetation outside of the bird nesting season (details are provided in Volume II Appendix B: Definite Plan Appendix J – Terrestrial Resource Measures) (EIR, pages 3-536 and 3-537).

While the Proposed Project avoidance and minimization measures would reduce the potential for short-term construction-related impacts on nesting birds within the Primary Area of Analysis, several of the components need more specificity to ensure that short-term construction activities would not result in significant impacts on special-status species or substantially interfere with movement and/or migration of wildlife species, or that any remaining potentially significant impacts are mitigated to the extent feasible (EIR, page 3-537).

Recommended terms and conditions relating to protection of nesting birds, included in Recommended Terrestrial Measure 9 below, were developed in consultation with CDFW and USFWS. This recommended terrestrial measure includes additional components beyond those listed as part of the Proposed Project (EIR, page 3-537 and 3-538).

Although removing individual active nests of non-special-status bird or CDFW special-status species would not rise to the level of population-level impacts, loss of a state- or federally- threatened active nest may affect populations levels and thus impacts on one individual or a nest may result in a significant impact (EIR, page 3-538).

Overseeing development and implementation of recommended term and conditions relating to nesting birds does not fall within the scope of the State Water Board's water quality certification authority. Because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds impacts as significant and unavoidable (EIR, page 3-538).

Recommended Terrestrial Measure 9 – Nesting Birds

- Removal or trimming of any trees or other vegetation for construction shall be conducted outside of the nesting season (February 1 through August 31). This shall include removal or trimming of trees along access roads and haul routes and within disposal sites. When this activity cannot occur (e.g., unanticipated

activity, unanticipated delays, or vegetation re-grew during the growing season), a nesting bird survey (as described below) shall be conducted prior to vegetation removal. Where clearing, cutting, grubbing, or structural removal/modification cannot occur outside the nesting season (e.g., not feasible with construction schedule, unanticipated activity), a nesting bird survey (as described below) shall be conducted prior to habitat removal.

- Nesting bird surveys shall be conducted by a qualified avian biologist approved by CDFW and USFWS. The avian biologist shall survey the nesting habitat (vegetation, buildings) to be removed in the construction area and suitable habitat buffering the construction area—within 500 feet for raptors (other than eagles) and within 300 feet for non-special status non-raptors (e.g., song birds) Surveys should be conducted within one week prior to habitat removal to determine if any native birds are nesting in those areas and have the potential to be affected by habitat removal. Surveys may be repeated beyond that described above (i.e., one week prior to habitat disturbance) to ensure that no nests have become active within vegetation or structures to be removed. If an old nest has been documented, it shall be removed during the non-nesting season to discourage future use of the nest.
- If potential greater sandhill crane nesting habitat is present within 500 feet of Proposed Project activities, any potential nesting habitat within the 500-foot radius shall also be surveyed for the presence of active greater sandhill crane nests.
- For all raptors (other than eagles), inactive nests shall be considered for removal before the nesting seasons begin, to the greatest extent practicable. (This includes osprey nests within 0.75 mile of construction areas.) For those nests where access is difficult, traffic cones or other deterrents shall be placed in the nest platform to prevent nesting in the year of construction. All deterrents shall be removed as soon as possible after construction activity is ceased within the disturbance buffer (Table 3.5-7 below) for that species.
- The on-site or avian biologist approved by CDFW and USFWS shall be on site prior to and during the bird nesting season to reduce the potential for nesting as much as possible.
- If an active nest is observed for a non-special-status species that is not a raptor, then the on-site biologist may identify an appropriate buffer, considering ambient conditions and response of bird to existing conditions. If this nest is in a location where the Proposed Project would destroy the nest, the KRRC shall attempt to reschedule activities until the young fledge. If the KRRC has considered rescheduling activities and implemented the minimization measures described above (repeated surveys, on-site monitors, removal of old non-active nests

outside of the breeding season), CDFW shall be contacted to discuss further measures.

- If an active raptor or special-status bird nest is observed, a restriction buffer shall be established. This shall include consideration of noise effects and line-of-sight considerations. (Bald and golden eagle species-specific recommended measures are discussed below in Potential Impact 3.5-13)
 - o Table 3.5-7 lists the restriction buffer distances and timing for many common raptor species with potential to occur within or near construction areas, as provided by USFWS (Strassburger 2011). All restriction buffers for raptors shall follow the spatial buffers as identified in Table 3.5-7, and consultation with agencies shall occur prior to implementing the activity if: (a) construction activity is within the buffer distance, or (b) the species is not identified in Table 3.5-7.
 - o Buffers for passerines not state or federally listed as candidate, threatened, or endangered shall be established by a qualified avian biologist approved by CDFW and USFWS.
 - o No vegetation removal or construction activities shall occur within the disturbance buffer until the young have fledged, as determined by the qualified biologist. Monitoring in these cases shall include determining and reporting to CDFW and USFWS the ultimate fate of the nest.
- If an active special-status bird nest is observed where the Proposed Project would destroy the nest, this could be a significant effect and KRRC shall obtain approval by applicable agencies.
- Tracking of nesting birds shall be reported once a month to applicable agencies (EIR, Vol. I, pages 3-538 – 3-540).

Table 3.5 7. Noise Disturbance Buffers and Seasonal Timing Restrictions for Nesting Raptors.

Species	Noise Disturbance Buffer (miles [feet])	Seasonal Timing Restriction
Bald eagle	1.00 mi (5,280 ft)	Jan 1–Aug 31
Golden eagle	1.00 mi (5,280 ft)	Jan 1–Aug 31
Northern goshawk	0.75 mi (3,960 ft)	March 1–Aug 15
Northern harrier	0.75 mi (3,960 ft)	April 1–Aug 15
Cooper’s hawk	0.75 mi (3,960 ft)	March 15–Aug 31
Ferruginous hawk	1.00 mi (5,280 ft)	March 1–Aug 1
Red-tailed hawk	0.75 mi (3,960 ft)	March 15–Aug 15
Sharp-shinned hawk	0.75 mi (3,960 ft)	March 15–Aug 31

Species	Noise Disturbance Buffer (miles [feet])	Seasonal Timing Restriction
Swainson's hawk	0.75 mi (3,960 ft)	March 1–Aug 31
Turkey vulture	0.75 mi (3,960 ft)	May 1–Aug 15
Peregrine falcon	1.00 mi (5,280 ft)	Feb 1–Aug 31
Prairie falcon	0.75 mi (3,960 ft)	April 1–Aug 31
Merlin	0.75 mi (3,960 ft)	April 1–Aug 31
American kestrel	0.05 mi (300 feet)	April 1–Aug 15
Osprey	0.75 mi (3,960 ft)	April 1–Aug 31
Burrowing owl	0.25–0.75 mi (1,320–3,960)	March 1–Aug 31
Flammulated owl	0.75 mi (3,960 ft)	April 1–Sept 30
Great horned owl	0.75 mi (3,960 ft)	Dec 1–Sept 30
Long-eared owl	0.75 mi (3,960 ft)	Feb 1–Aug 15
Northern saw-whet owl	0.75 mi (3,960 ft)	March 1–Aug 31
Short-eared owl	0.75 mi (3,960 ft)	March 1–Aug 1
Northern pygmy-owl	0.75 mi (3,960 ft)	April 1–Aug 1
Western screech-owl	0.75 mi (3,960 ft)	March 1–Aug 15
Barn owl	0.062–0.25 mi (330–1,320)	Feb 1–Sept 15

Source: USFWS (Strassburger 2011)

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on nesting birds from construction-related noise and habitat alterations, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no short-term impacts on nesting birds because no construction-related noise would be generated. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-12 (short-term)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Volume I Section 2.7.6 Hatchery Operations), road and bridge upgrades (Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in noise disturbance and habitat removal that may result in significant impacts on willow flycatcher. The Proposed Project does not include a significant amount of tree removal, but rather it is anticipated that habitat removal could occur if branches or small trees would need to be removed in order to upgrade bridges and roads. As a result, it is not anticipated that the quantity or quality of the habitat would be degraded, but rather the potential for direct or incidental harm from noise or removal of a nest in a branch, if present. There are few locations where modeled willow flycatcher habitat overlaps the Limits of Work (EIR, Vol. I, page 3-541). If activities occur in this area, the Proposed Project may cause nest abandonment due to construction noise or direct harm due to physical removal of vegetation, similarly to the impacts described in Volume I Potential Impact 3.5-10 for nesting birds. The Proposed Project includes construction activities at Copco Road Bridge over Jenny Creek, which is located in an area of known willow flycatcher use (EIR, Vol. I, pages 3-540 – 3-541).

The Proposed Project includes components to avoid and minimize impacts including conducting a habitat evaluation to identify suitable habitat, and if it is determined that there would be impacts on the potential willow flycatcher habitat from Project implementation in areas where presence is uncertain or cannot be assumed, the KRRC will conduct protocol surveys for willow flycatcher in the spring of the year prior to drawdown, in coordination with resource agencies (Volume II Appendix B: Definite Plan – Appendix J). Also, when harvesting willow pole cuttings to support restoration activities, KRRC proposes to avoid areas where there is known habitat for willow flycatcher (Volume II Appendix B: Definite Plan – Appendix H) (EIR, Vol. I, page 3-541).

The EIR explains that while the Proposed Project avoidance and minimization measures would reduce the potential for short-term construction-related impacts on willow flycatcher within the Primary Area of Analysis, the aforementioned components need more specificity to ensure that short-term construction activities would not result in significant impacts on this special-status species or substantially interfere with movement and/or migration of wildlife species, or that any remaining potentially significant impacts are mitigated to the extent feasible. Implementation of the recommended measure below, developed in consultation with CDFW, would reduce potential short-term construction-related impacts on willow flycatcher to less than significant. However, because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds this impact as significant and unavoidable (EIR, Vol. I, page 3-542).

Recommended Terrestrial Measure 10 – Willow Flycatcher

- As proposed by the KRRC, the KRRC shall conduct an assessment to identify potential suitable habitat for willow flycatcher in habitat that has the potential to

be affected by the Proposed Project. The assessment would occur in the spring of the year prior to drawdown or before.

- Construction activities within suitable habitat or known willow flycatcher locations (e.g., Jenny Creek Bridge replacement activities) shall occur outside of the bird nesting season and habitat disturbance shall be minimized as much as possible. The on-site biologist (Recommended Terrestrial Measure 3) shall monitor to ensure that habitat removal includes only the amount necessary to implement the action and would not affect the overall habitat quality of the patch.
- If construction activities or habitat removal occurs in potentially suitable habitat during the bird nesting season, protocol-level surveys will be conducted prior to the construction activity or habitat removal, and if the willow flycatcher is documented within an area that has the potential to be affected, coordination with CDFW shall occur to identify an appropriate buffer to be implemented. Any impact resulting from the Proposed Project that would result in the mortality or physical harm or impairment of an individual willow flycatcher would be a significant impact. If activities would need to occur within the buffer, the KRRC shall implement any measures CDFW deems necessary. Report on the status of any willow flycatcher surveys once a month when surveys are conducted to applicable agencies (EIR, Vol. I, page 3-543).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar short-term impacts on willow flycatcher from construction-related noise and habitat alterations, though at a reduced scale. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no short-term impacts on willow flycatcher because no construction-related noise would be generated. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-13

The State Water Board finds that the Proposed Project would result in short-term impacts on bald and golden eagles from construction-related noise and habitat alterations, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Short-term construction-related activities including, but not limited to, structure demolition, hatchery modifications (Volume I Section 2.7.6 Hatchery Operations), road and bridge upgrades (Volume II Appendix B: Definite Plan – Appendix K), and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in noise disturbance and habitat removal impacts on bald and golden eagles. Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act that prohibits anyone without a permit to take alive or dead any part of a bald or golden eagle or their nest (EIR, page 3-543). Impacts on bald and golden eagles are similar to those described above under Potential Impact 3.5-10 for nesting birds.

Bald eagle nesting trees are known to exist within or near proposed Lower Klamath Project construction areas. A bald eagle nest, active from 1986 to 1997, was located approximately two miles from Iron Gate Dam; a nest active from 1993 to 1997 was documented within 0.5 mile of Iron Gate Dam; and an active nest in 2002 was documented within two miles of Iron Gate Dam (Willy 2017, as cited in Appendix B: Definite Plan). As bald eagle nests have been previously documented nearby, and as bald eagles may use the same nests in multiple years, there is a potential for bald eagles to nest in these same sites (or locations in similar habitats) and be disturbed by Proposed Project noise. Noise disturbance may cause nest abandonment while physical removal of vegetation may result in direct harm (EIR, page 3-543 – 3-544).

The Proposed Project includes components to avoid and minimize construction-related impacts on bald and golden eagles (Volume II Appendix B: Definite Plan – Appendix J). While the Proposed Project avoidance and minimization measures would reduce the potential for short-term construction-related impacts on bald and golden eagles within the Primary Area of Analysis, the aforementioned components need more specificity to ensure that short-term construction activities would not result in significant impacts on bald and golden eagles or substantially interfere with their movement and/or migration, or that any remaining potentially significant impacts are mitigated to the extent feasible. Implementation of the bald and golden eagle mitigation measure below, developed in consultation with CDFW and USFWS, would reduce potential short-term construction-related impacts on bald and golden eagles to less than significant (EIR, pages 3-544 – 3-546).

Mitigation Measure TER-7 – Bald and Golden Eagle

- KRRC shall develop an Eagle Avoidance and Management Plan in coordination with USFWS and CDFW.
- A two-year survey for eagle use patterns shall be conducted prior to construction activities.
 - o The first-year survey shall determine bird use patterns at any facilities to be removed or modified during the time of year most likely to detect bird usage (this was completed by KRRC in 2017).

- o The second-year survey shall include focused surveys (see below).
- o Surveys shall be conducted by a qualified avian biologist, approved by resource agencies (CDFW and USFWS).
- A focused survey (two site visits) shall be conducted in a single nesting season within two years prior to drawdown to document the presence of nests. These focused surveys shall identify bald and golden eagle nests within two miles of disturbance areas within the Limits of Work, including but not limited to demolition areas where there may be any loud noise disturbance (e.g., helicopter or plane). The early nesting season survey shall occur at a time when eagles are most likely found at the nest sites, and the second survey shall occur later in the season and prior to the fledglings leaving the nest to confirm nesting activity. All observations shall be reported to CDFW using the California Bald Eagle Nesting Territory Survey Form (CDFW 2017d).
- Within two weeks prior to commencing construction or ground-disturbing activities, KRRC shall conduct at least one pre-construction survey within the survey area defined above.
- Wherever possible, clearing, cutting, and grubbing activities shall be conducted outside of the eagle nesting season (January 1 through August 31).
- If active eagle nests are documented during the surveys, restriction buffer shall be identified in coordination with USFWS and CDFW and established around the nest to ensure that nests are not disturbed. This buffer may be reduced in coordination with USFWS and CDFW, while taking into consideration components such as proposed activity, distance to activity, terrain, and line of site. For example, in coordination with agencies, if a nest is not within line-of-site, meaning that trees or topographic features physically block the eagle's view of construction activities, the buffer could be reduced. Further reduction of buffers or allowance of limited activity inside of buffers could occur in coordination with on-site biologist, CDFW, and the USFWS, while being consistent with the Eagle Avoidance and Minimization Plan, if it is determined that the activities shall not jeopardize nesting success. To reduce the potential for nesting in a previously identified active nest, measures may be implemented prior to the nesting season such as removing the nest or making nest temporarily unavailable (e.g., placing cone or ball in nest).
- Nests within a one-mile buffer shall be monitored by an USFWS- and CDFW-approved biologist when there is a potential for noise disturbance, in order to assess whether eagle activity patterns are normal, as compared with that observed during baseline surveys described above.
- If activities are anticipated to result in take under the Bald and Golden Eagle Protection Act, it would be considered a significant impact and KRRC will

coordinate appropriate measures, including procurement of any necessary take permits, with USFWS. If a take permit is obtained, the need to implement the measures above shall be reevaluated with USFWS. Report on the status of bald and golden eagle surveys within one month of the survey to applicable agencies (Volume III, Attachment 1, pages AT1-693 to AT1-695).

Potential Impact 3.5-14

The State Water Board finds that the Proposed Project would result in short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that in the short term, construction activities including, but not limited to, structure demolition, hatchery modifications (Section 2.7.6 Hatchery Operations), road and bridge upgrades (Appendix B: Definite Plan – Appendix K), and culvert improvements (Section 3.22.2.3 Road Conditions) could disturb bat roosts through construction noise, physical vibration, and direct removal of roosting habitat (EIR, page 3-547).

Structures in the Lower Klamath Project are providing habitat for small day roosts and large maternity colonies. Recent structure assessments and surveys in 2017 and 2018 identified roosts in 22 structures with the largest of colonies (between a few hundred and a few thousand individuals) observed thus far at the Copco No. 1 Dam - C12 Gatehouse, Copco No. 1 Diversion Tunnel, Vacant House #21601 (light yellow house), and Iron Gate Diversion Tunnel (Volume II Appendix B: Definite Plan – Appendix J; KRRC 2018a, and KRRC 2018b). (See Volume I Table 3.5-8 and Volume I pages 3-547 – 3-549).

Short-term impacts may occur from disturbing a maternity and/or hibernacula colony, including those possibly used by special-status bat species. Structure modifications or significant noise or vibrational disturbance occurring during the bat maternity season have the greatest potential to affect special-status bats (EIR, page 3-549).

In the long term, removing maternity or hibernacula roosts has the potential to result in population-level impacts, as it is not known if the bats will relocate or if there is suitable habitat in the adjacent area to support these roosts. Removal of large maternity or hibernacula roosts would result in a significant long-term impact (EIR, page 3-549).

Without surveying to document roosting bats, conducting construction within limited operating periods that are least likely to overlap with sensitive bat life histories, and creation of successful replacement roost habitats, impacts on bats in the short term and long term would be significant (EIR, page 3-549).

The Proposed Project includes components to avoid and minimize both short- and long-term construction-related impacts and loss of habitat on roosting bats (EIR, page 3-550) (additional details are provided in Volume II Appendix B: Definite Plan – Appendix J).

While the Proposed Project avoidance and minimization measures would reduce the potential for short-term construction-related impacts on bats within the Primary Area of Analysis, the aforementioned components need more specificity to ensure that short-term construction activities would not result in significant impacts on special-status species or substantially interfere with movement and/or migration of wildlife species, or that any remaining potentially significant impacts are mitigated to the extent feasible (EIR, page 3-550).

The recommended terrestrial measure below, developed in consultation with CDFW, include additional components beyond those listed as part of the Proposed Project and would be necessary to reduce potential short-term construction-related impacts on special-status to less than significant. However, because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures, it finds this impact as significant and unavoidable (EIR, pages 3-550 – 3-551).

Recommended Terrestrial Measure 12 – Roosting Bats and Habitat

- Surveys described below shall be conducted within five years prior to drawdown, and within one year prior to drawdown all structures shall be reassessed to detect any change to the roost (maternity and hibernacula).
- A qualified bat biologist shall conduct two years of bat surveys at the facilities to be removed or modified to determine bat use (species use, roost type [maternity, day, night, hibernacula]) using visual observation/emergence surveys to assess size of roost and using acoustic detectors to identify species (or species group if identification to species is not feasible) present at the roost. Surveys shall be conducted during the time of year most likely to detect bat use during the maternity and hibernacula season.
- If surveys indicate that a structure is utilized as a bat maternity roost, then removal or modification of the facility shall occur outside of the bat maternity season (March 1–September 15). If the facility is used as a winter hibernacula, then removal or modification of the facility shall occur outside of the hibernacula season (October 15–February 28) or when it is determined to be unoccupied. These timeframes may be adjusted based on site-specific conditions, data collected on-site or in the region, and proposed activities, as determined by the qualified bat biologist and in consultation with CDFW.
- No direct or indirect disturbance (exclusion or demolition as discussed below) shall occur during the peak of the maternity season (April 15–August 31).
- Consistent with the KRRC’s proposed measure, humane bat exclusion methods to seal facility entry sites (e.g., blocking by netting or installing sonic bat deterrence equipment) may occur to prevent bat use in a structure during the demolition. A Bat Exclusion Plan to identify proposed exclusion methods shall be developed by the qualified bat biologist and approved by CDFW prior to initiation.

Exclusion measures shall be put in place when bats are active and weather is fair outside between September 1 and October 15. During this allowable period, these activities may occur when evening temperatures are greater than 45°F and no more than 0.5 inch of rainfall is predicted within the following 24 hours. The sites shall be monitored to determine whether the exclusion was successful. Humane bat exclusion methods shall be conducted by, or under the supervision of, a qualified bat biologist with experience in conducting humane exclusions that holds a CDFW Scientific Collecting Permit for bat capture.

- If demolition occurs at a time when a structure is occupied by a maternity colony or hibernating colony and exclusion was deemed infeasible, a plan shall be developed (this could be part of the Bat Exclusion Plan) in coordination with a qualified bat biologist and approved by CDFW to carefully remove the occupied bat habitat at a time when it would have the least impact on bats present and in a manner that avoids bat injury and mortality. Demolition shall occur when bats are active and weather is fair outside between September 1 and October 15. During this period, activities to remove the occupied habitat may occur when evening temperatures are greater than 45°F and no more than 0.5 inch of rainfall is predicted within the following 24 hours. During demolition activities, a qualified bat biologist shall be present on site.
- If an on-site biologist (Recommended Terrestrial Measure 3) conducts a daily pre-construction survey (Recommended Terrestrial Measure 7) of a structure previously assessed as not providing habitat for bats and finds a few bats (and confirmed neither a hibernacula or maternity colony), a qualified bat biologist with experience handling bats and approved by CDFW may capture and release the bat(s) at dusk during suitable weather (i.e., not raining, temperatures greater than 45 degrees F).
- To reduce short-term and long-term impacts on bats from the permanent loss of maternity or hibernating roosting habitat, creation and/or enhancement of artificial roosting habitat shall occur prior to the structures being removed. New artificial bat roosting habitat shall be designed to support equivalent roost (maternity, hibernacula) habitat, numbers, and species excluded from the demolished roosts, with the goal of meeting the success criteria defined below.
 - o The total number of artificial bat roosts shall depend on the total number of facilities removed with maternity and hibernacula bat roosts. The size and design of artificial bat roosts shall be informed by the features of the removed structure and the type and size of roost; critical design elements shall include access, ventilation, and thermal conditions.
 - o Artificial bat roosts may include, but are not limited, to enhancing bridges to support roosting habitat and constructing free-standing artificial bat roosts on- or off-site in consultation with bat specialists and the resource agencies.

Preference shall be given to on-site and in-kind solutions; however, if artificial free-standing bat roosts are unlikely to remain into the foreseeable future (e.g., due to land ownership changing following completion of the Proposed Project), the placement of artificial bat roosts in off-site locations on publicly owned land (e.g., Horseshoe Ranch Wildlife Area) may be considered in coordination with agencies (CDFW).

- o Experienced contractors shall perform the installation of bat roosts. The artificial bat roosts shall meet the applicable specifications of Bats in American Bridges (Keeley and Tuttle 1999) and California Bat Mitigation Techniques, Solutions, and Effectiveness (H.T. Harvey and Associates 2004).
- o Post-construction monitoring of the mitigated enhanced or replacement bat roosts shall occur multiple times of the year and depend on the type of roost being created. At a minimum, roost surveys shall occur seasonally (four times per year). Monitoring surveys may include, but are not limited to, emergence surveys, acoustic monitoring, and guano observation.
- o Monitoring shall occur for at least five years or until the mitigation can be considered successful. At Year 3, artificial bat roosts meeting the success criteria (described below) may be eliminated from the monitoring. Criteria shall be considered successful through concurrence with CDFW or their designated representatives.
 - The mitigated enhanced and/or replacement bat roosts will be considered successful if the following occurs: (1) the mitigation roost provides the function(s) of the demolished roost (i.e., maternity, hibernacula) and (2) the roost is occupied by a similar composition of species and number of bats that were present in the demolished roost (H.T. Harvey and Associates 2004). If this standard is not met, KRRC shall coordinate with CDFW, as appropriate, to ascertain the potential need for further measures (e.g., modifications to the mitigation roost(s), additional monitoring).
- Report on the status of bat surveys, exclusion activities, and success criteria monitoring within one month of the survey to applicable agencies (EIR, pages 3-551 – 3-553).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, and No Hatchery Alternative) would have similar short-term and long-term impacts on bats from construction-related noise and loss of roosting habitat, though at a reduced scale. The Continued Operations with Fish Passage Alternative would not have short-term impacts to bats as the structures where large bat maternity roosts have been documented would be retained under this alternative (including Copco No. 1 Dam – C12 Gate house, Copco No. 1 Diversion

Tunnel, and Iron Gate Diversion tunnel). However, hibernacula or maternity roosts are within the range of the lesser amount of construction, impacts would still be the same on those bat colonies as the Proposed Project. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no impacts on bats because no construction-related noise would be generated, or habitat removed. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.5-16 (Foothill yellow-legged frog egg masses)

The State Water Board finds that the Proposed Project would result in significant impacts to Foothill yellow-legged frog egg masses, if present, and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that Foothill yellow-legged frog, proposed as threatened under CESA, are known to occur in the lower reaches of the Klamath River, while only historical occurrences are known closer to the Proposed Project (EIR, page 3-556). High SSCs from dam removal could have a short-term significant impact on the foothill yellow-legged frog egg masses and tadpoles, if present. Silt has often been observed on the outer surfaces of egg masses, which may make the eggs less conspicuous and thereby possibly reducing predation by visual predators (Lannoo 2005). However, a study to evaluate the growth and survival of western toad tadpoles from initial pulses of 130 and 260 mg/L of suspended sediment documented slower growth rates and reduced survival to metamorphosis as a result of tadpoles consuming the sediment (Wood and Johnson 2009). Therefore, suspended sediment may result in mortality or harm to state-candidate-threatened foothill yellow-legged frogs through reduced survival and growth of egg masses and tadpoles, which would be a significant unavoidable impact (EIR, page 3-557). As discussed above in the discussion of Potential Impact 3.2-3, there are no feasible mitigation measures to meaningfully reduce sediment impacts.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, and No Hatchery Alternative) would have similar short-term and long-term impacts on foothill yellow-legged frog egg masses.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no short-term impacts associated with elevated SSCs in the mainstem Klamath River from reservoir drawdown since the dams would remain in place and no drawdown would occur under these alternatives. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits

under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.5-22

The State Water Board finds that the Proposed Project would result in short-term and long-term impacts on western pond turtle from loss of aquatic habitat, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that in the short term, reservoir drawdown would affect shoreline habitat currently used by western pond turtle. The potential impacts on western pond turtle may occur from turtles being entrapped during sediment redistribution, change in temperature on overwintering turtles in reservoir sediment from drawdown, and entrapment in cracks and increased predation during migration over the reservoir footprints following drawdown. The KRRC proposes to draw down reservoirs between January and March at a maximum drawdown rate of five feet per day (Volume I Table 2.7-1, Volume II Appendix B: Definite Plan – Appendix H). Exposing reservoir sediment to ambient air conditions during and following drawdown will change the temperature of the sediment (more solar exposure and colder nights and possible wind shear). Turtles overwintering in the sediment would then be subject to these changing temperature stresses. There is a potential for erosion and shallow slides to occur at locations currently along the reservoir rims and existing water surface elevations. At Copco No. 1 Reservoir in particular, diatomite (fine-grained sedimentary rock formed from consolidated diatomaceous earth) terrace deposits surround much of the shoreline and extend below the surface waters. These deposits would exhibit low shear strength and would likely be unstable, potentially resulting in shallow slides that could entrap juvenile and adult turtles. Following drawdown, juvenile and adult western pond turtles may be affected including those that may be overwintering in the sediment or are present in the reservoir; turtles overwintering or present on land would not be affected by the sediment redistribution. The KRRC identified the locations of overwintering aquatic habitat (i.e., reservoir levels two meters deep) based on bathymetry data (AECOM et al. 2017), and in considering proximity to suitable basking and nesting habitation locations identified by PacifiCorp (2004a), the locations where there is the highest potential for redistribution of sediment to affect turtles at Copco No. 1 Reservoir are the northern arm of the reservoir near Beaver Creek and at Iron Gate Reservoir in the southeast cove, north cove at Camp Creek, and at the confluence of Jenny Creek and Fall Creek (Volume I Figures 3.5-7 and 3.5-8) (EIR, pages 3-563 – 3-564).

The sediment underneath the reservoir is approximately 80 percent water by volume, and after the reservoir is drawn down, the sediment is expected to dry, decrease in thickness, and form cracks. The sediment drying process may also result in turtles becoming trapped in the cracks and subject to predation. In addition, with drying sediment and inability to hide under vegetation or debris, this may increase the potential

of predation and thermal stress on hatchlings migrating during the spring of the drawdown year (EIR, page 3-567).

Although exact numbers of take are not possible to identify, the impact on the reservoir population may be significant. Implementation of Mitigation Measure TER-4 (western pond turtle rescue after reservoir drawdown operations), developed in coordination with CDFW, would reduce these potential short-term impacts to less than significant (EIR, page 3-567).

In addition to requiring Mitigation Measure TER-4, the State Water Board has authority to review and approve any final plan developed to protect western pond turtle through its water quality certification under Clean Water Act Section 401. The State Water Board has issued a draft water quality certification which sets forth monitoring and adaptive management requirements for an Amphibian and Reptile Management Plan as Condition 15 (EIR, page 3-568).

The EIR explains that in the long term, riverine habitat would continue to support the life history functions of western pond turtle. Although western pond turtles are documented throughout the Proposed Project reservoirs and along several reaches of the terrestrial resources Primary Area of Analysis, precise population data are not available. Thus, it is not possible to quantitatively assess population-level effects as a result of the Proposed Project (EIR, page 3-568). Implementation of Mitigation Measure TER-4 (western pond turtle rescue after reservoir drawdown operations), developed in coordination with CDFW, would reduce these potential long-term impacts to less than significant.

Mitigation Measure TER-4 Western Pond Turtle Rescue After Reservoir Drawdown Operations

Prior to implementing reservoir drawdown, KRRC shall develop a Western Pond Turtle Rescue and Relocation Plan in coordination with applicable agencies to identify a means of relocating as many turtles as feasible along the reservoir shoreline, assuming conditions are safe for all personnel. It is understood that not all turtles will be found, and not all turtles seen will be able to be captured and relocated. The goal of the plan shall be to apply a good-faith effort to reduce the number of turtles that are subject to mortality such that there will not be a significant impact on Western Pond turtles. The plan shall identify the following components:

- survey timing to cover multiple life stages (adults, overwintering adults, emerging hatchlings) present between initial reservoir drawdown and emergence;
- survey periodicity, focusing observations during periods of highest likelihood of observing these life stages—surveys may be considered complete after an identified number of surveys (e.g., three) does not detect turtles;
- survey locations that focus on suitable nesting habitat and locations where high numbers of turtles were documented during the general wildlife surveys (e.g.,

Copco Reservoir near Beaver Creek Raymond Gulch coves and at Iron Gate Reservoir in the southeast cove, north cove near Camp Creek, and at the confluence of Jenny Creek and Fall Creek);

- relocation areas in suitable habitat (that provide cover and food resources), which may include lower reaches of tributaries to the Klamath River;
- survey methodology—as nests and young are difficult to locate, an approach of using a trained dog to identify nests should be considered; and
- reporting of survey results within 60 days of the completion of surveys to applicable agencies and the State Water Resources Control Board (EIR, pages 3-569 – 3-570).

Potential Impact 3.5-26

The State Water Board finds that the Proposed Project would result in impacts on special-status wildlife from Bogus Creek flow diversions, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that based on the potential for low flows (less than 4.5 cfs) in the Bogus Creek bypass reach during some years, and the uncertain commitment under the Proposed Project to ensure flows to protect anadromous salmon volitional migration, there could be significant flow-related impacts to any special-status wildlife that are present. Mitigation Measure AQR-3 is included in the EIR (Volume I Section 3.3.5 Potential Impact 3.3-23) to ensure that the minimum flow requirement for anadromous fish species is bypassed, and this would also provide assurance of suitable habitat for special-status amphibians and reptiles in the Bogus Creek bypass reach, if they are present. Implementation of Mitigation Measure AQR-3 (see Potential Impact 3.3-23 above) would reduce potential impacts to less than significant (EIR, pages 3-573 – 3-574).

Potential Impact 3.5-28

The State Water Board finds that the Proposed Project would result in significant short-term impacts on sensitive habitats and special-status terrestrial wildlife and plant species from construction activities on Parcel B lands and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

The EIR explains that the Secondary Area of Analysis was used to evaluate potential impacts on sensitive habitats and special-status species on Parcel B lands. As discussed in Volume I Section 2.7-10 Land Disposition and Transfer, as part of the Proposed Project, Parcel B lands would be transferred to the states (i.e., California, Oregon), as applicable, or to a designated third-party transferee, following dam removal. The outcome of the future Parcel B land transfer is speculative with regard to land use; while the lands would be managed for the public interest, this could include open space,

active wetland and riverine restoration, river-based recreation, grazing, and potentially others (EIR, page 3-574).

It is likely that there would be at least some construction for recreation facilities, active restoration, fencing, trail-building, or other land management activities. To the extent there are construction activities, these could involve the same types of potential short-term impacts to sensitive habitats and to special-status terrestrial wildlife and plant species as described in Volume I Section 3.5.5.1 Vegetation Communities, 3.5.5.2 Culturally Significant Species, and Section 3.5.5.3 Special-status Species and Rare Natural Communities. In the long term, if managed grazing activities were to occur beyond the level occurring under existing conditions, this could result in reduced habitat diversity and erosion-related significant impacts on special-status species, vegetation communities, and wetlands within the Secondary Area of Analysis (EIR, page 3-575).

To the extent there are construction activities under future land uses, it would be appropriate to implement the terms and conditions recommended to FERC relating to protection of sensitive habitats and special-status species and to include measures that provide the same or better level of protection for sensitive habitats and special-status terrestrial wildlife and plant species as the measures specified in Mitigation Measures WQ-1 and TER-1 through TER-4, and Recommended Terrestrial Measures 1 through 13, as modified for construction involved in the particular future land use activity or activities that result from the transfer of Parcel B lands. However, because the State Water Board cannot ensure implementation of recommended measures, the impact is significant and unavoidable (EIR, page 3-575).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, and No Hatchery Alternative) would have similar impacts on sensitive habitats and special-status terrestrial wildlife and plant species, though at a reduced scale for some of the alternatives. However, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no impacts on bats because no construction-related noise would be generated, or habitat removed. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.5-7 (special status)

As indicated above, the Proposed Project construction activities including road, bridge, hatchery modifications, and culvert improvements (Volume I Section 3.22.2.3 Road Conditions) could result in direct mortality or damage to special-status plant species or indirect damage by degrading special-status plant habitat (e.g., introducing invasive plant species). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable short-term impact on special-status plants from construction-related activities within the Limits of Work.

The Proposed Project includes long-term beneficial effects on the following terrestrial resources: riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; benthic macroinvertebrates due to increased habitat availability and improved habitat quality; deer from an increase in winter range habitat; rare natural communities, wetlands, and riparian vegetation from herbicide use during reservoir restoration that would improve habitat conditions by reducing competition from invasive species; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status plants from construction-related activities within the Limits of Work.

Potential Impact 3.5-8

The State Water Board finds that the Proposed Project would result in significant impacts associated with short-term and long-term impacts on special-status wetland plants surrounding the reservoirs due to removal of Copco No. 1, Copco No. 2, and Iron Gate reservoirs. As indicated above, the Proposed Project would result in significant impacts on special-status wetland plants if those plants are not captured during the targeted surveys and also where avoidance of documented and undocumented special-status plants is infeasible and replanting does not succeed in re-establishment of new populations. As explained above, mitigation/avoidance of this impact is not feasible.

Approval of the Proposed Project thus would result in a significant unavoidable impact on special-status wetland plants.

The Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status wetland plants surrounding the reservoirs.

Potential Impact 3.5-10 (bats and American badger)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on special-status mammals (bats and American badger) from construction-related activities within the Limits of Work. As indicated above, the Proposed Project would result in significant impacts on special-status mammals (bats and American badger) due to construction activities, such as structure demolition hatchery modifications, and road, bridge, and culvert improvements, that could result in direct mortality or harm to special-status amphibian, reptile, and mammal species or associated habitat with the potential to occur in the Primary Area of Analysis for terrestrial resources. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on special-status mammals (bats and American badger) because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients

upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on special-status plants.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact on special-status mammals (bats and American badger) due to construction activities.

Potential Impact 3.5-11

The State Water Board finds that the Proposed Project would result in significant short-term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work. As indicated above, construction activities associated with the Proposed Project, such as structure demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could result in disturbance to or mortality of nesting birds, including nest abandonment due to construction noise and habitat removal. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on nesting birds because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on nesting birds.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short-term impacts on nesting birds from construction-related noise and habitat removal within and surrounding the Limits of Work.

Potential Impact 3.5-12 (short-term)

The State Water Board finds that the Proposed Project would result in significant short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs. As indicated above, construction activities associated with the Proposed Project, such as structure

demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could result in noise disturbance and habitat removal that may result in significant impacts on willow flycatcher. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on nesting birds because the State Water Board cannot ensure implementation of the Recommended Terrestrial Measures.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts associated on nesting birds.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short-term impacts on willow flycatcher from construction-related noise disturbance and habitat removal at Copco No. 1 and Iron Gate reservoirs.

Potential Impact 3.5-14

The State Water Board finds that the Proposed Project would result in short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities. As indicated above, construction activities associated with the Proposed Project, such as structure demolition, hatchery modifications, road and bridge upgrades, and culvert improvements, could disturb bat roosts through construction noise, physical vibration, and direct removal of roosting habitat. Structure modifications or significant noise or vibrational disturbance occurring during the bat maternity season have the greatest potential to affect special-status bats. In the long term, removing maternity or hibernacula roosts has the potential to result in population-level impacts, as it is not known if the bats will relocate or if there is suitable habitat in the adjacent area to support these roosts. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on bats in the short term and long term.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new

surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short- and long-term significant and unavoidable impacts on special-status bats, maternity roosts, and hibernacula.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable short- and long-term impacts on special-status bats, maternity roosts, and hibernacula from construction noise and loss of roosting habitat at existing Lower Klamath Project facilities.

Potential Impact 3.5-16 (Foothill yellow-legged frog egg masses)

The State Water Board finds that the Proposed Project would result in significant impacts to Foothill yellow-legged frog egg masses, if present. As indicated above, high SSCs from dam removal could have a short-term significant impact on the foothill yellow-legged frog egg masses and tadpoles, if present, through reduced survival and growth of egg masses and tadpoles. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on Foothill yellow-legged frog egg masses, if present.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts on Foothill yellow-legged frog egg masses.

The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts on Foothill yellow-legged frog egg masses, if present.

Potential Impact 3.5-28

The State Water Board finds that the Proposed Project would result in significant short-term impacts on sensitive habitats and special-status terrestrial wildlife and plant species from construction activities on Parcel B lands. As indicated above, it is likely that there would be at least some construction for recreation facilities, active restoration, fencing, trail-building, or other land management activities on Parcel B lands that could involve the same types of potential short-term impacts to sensitive habitats and to special-status terrestrial wildlife and plant species as the main Project. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands.

However, the Proposed Project includes long-term beneficial effects on terrestrial resources as discussed above, including, but not limited to, riparian habitat downstream of the Lower Klamath Project due to sediment deposition and the creation of new surfaces for colonization; willow flycatcher from additional riparian habitat in the former location of Copco No. 1 and Iron Gate reservoirs; special-status amphibians and reptiles in riverine habitats from improved water quality; effects on wildlife from increased habitat for salmonid spawning, production, and migration and increase in prey and overall nutrient distribution; wildlife from increased wildlife movement opportunities; and terrestrial wildlife from an increase in the distribution of salmon-derived nutrients upstream of Iron Gate, Copco No. 1 and Copco No. 2 dams. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impacts on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands. The overall benefits of the Proposed Project along with benefits on terrestrial resources, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts on sensitive habitats and special-status terrestrial wildlife and plant species on Parcel B lands.

Conclusions

The State Water Board recognizes that the Proposed Project is anticipated to have significant impacts on terrestrial species, as well as beneficial impacts on terrestrial species, as described above. The State Water Board finds that the benefits to terrestrial species outweigh the significant and unavoidable impacts, and that the impacts are therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Flood Hydrology

Overview

The Proposed Project includes components that could have a significant effect on flood hydrology but are necessary to accomplish the intended long-term water quality and fishery improvements. The Final EIR examines the potential effect of the Proposed Project related to flood hydrology. As discussed in detail in Section 3.6 of the EIR, the State Water Board concludes that Potential Impacts 3.6-1, 3.6-2, 3.6-3 (flood forecasting), 3.6-4, 3.6-5, 3.6-6, and 3.6-7 will either not be significant or will be beneficial. Beneficial effects of the Proposed Project include long-term decrease in the risk of dam failure resulting in flooding of areas downstream of the Lower Klamath Project.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect associated with changes to the 100-year floodplain is set out below.

CEQA Findings

Potential Impact 3.6-3 (exposing structures to a substantial risk of damage due to flooding)

The State Water Board finds that the long-term change in the Federal Emergency Management Agency (FEMA) 100-year floodplain inundation extent from Iron Gate Dam (RM 193) to Humbug Creek (RM 174) is a significant environmental effect that could potentially expose existing structures, which cannot feasibly be moved or elevated, to a substantial risk of flood damage and/or loss. It is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).)

Hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could alter the 100-year floodplain inundation area downstream of Iron Gate Dam between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012). The modeling indicates that the differences between existing conditions and the Proposed Project are minor. Floodplain inundation maps illustrating these model results are presented in Volume II, Appendix K of the EIR. The mapping includes the effects of the increase in the 100-year flood peak flow rate and the small amounts of sediment deposition in the river channel following removal of the Lower Klamath Project dams (EIR, page 3-670).

USBR (2012) estimated the number of residences and structures located along the Klamath River between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) that would potentially be affected should the dams be removed. This estimate was based on photo interpretation and field visits. The EIR indicates that a total of 34 legally-established habitable structures are located within the existing 100-year floodplain between Iron Gate Dam (RM 193) and Humbug Creek (RM 174), and an estimated 2 additional legally-established habitable structures would be within the altered 100-year floodplain in the same reach following dam removal, for a total of 36 legally established

habitable structures within the altered 100-year floodplain following dam removal (Volume II Appendix B: Definite Plan) (EIR, page 3-631).

An estimated three river crossings in this downstream reach could also be affected by the increase in flood depths: two pedestrian bridges and the Central Oregon and Pacific Railroad Bridge (Appendix B: Definite Plan). The KRRC proposes to remove Pedestrian Bridge #1, which is dilapidated and is not structurally safe, with the owner's permission. The KRRC proposes to consult with the owner of Pedestrian Bridge #2, which is in good condition, during the detailed design phase to determine whether this bridge should be removed or replaced, at the KRRC's expense. The KRRC proposes to perform more analysis during the detailed design phase to confirm the effects of scour on the railroad bridge and the KRRC would make any needed improvements (EIR, pages 3-631 – 3-632).

The change to the 100-year floodplain inundation area between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) due to dam removal would result in exposing approximately two additional habitable structures to a substantial risk of damage due to flooding and is considered a significant impact. To address this potential impact, the Proposed Project includes implementation of the Downstream Flood Control Project Component (Project Component), as described in Volume I Section 2.7.8.4 Downstream Flood Control and in Appendix B: Definite Plan. This Project Component replaces Mitigation Measure H-2 from the 2012 KHS A EIS/EIR (EIR, page 3-632).

The KRRC proposes to work with willing landowners to implement a plan to address the significant flood risk for the 36 habitable structures (including permanent and temporary residences) located in the altered 100-year floodplain between Iron Gate Dam and Humbug Creek following dam removal. The KRRC would work with the owners to move or elevate the habitable structures in place before dam removal, where feasible, to reduce the risks of exposing people and/or structures to damage, loss, injury, or death due to flooding. However, flood damage and/or loss of structures that are not feasible to move or elevate would be a significant impact. Final determination of the future 100-year floodplain after dam removal would be made by FEMA. The KRRC is coordinating with FEMA to initiate the map revision process (Appendix B: Definite Plan). The Project Component would also evaluate the river crossings that could be affected by a substantial risk of damage due to flooding (EIR, page 3-632).

Under the Proposed Project, the KRRC's Emergency Response Plan would include informing the NWS River Forecast Center of a planned major hydraulic change (i.e., removal of four dams) to the Klamath River that could potentially affect the timing and magnitude of flooding downstream of Iron Gate Dam (Appendix B: Definite Plan). As described in the Definite Plan (Appendix B), the KRRC would also inform FEMA of the planned major hydraulic change to the Klamath River (i.e., dam removal) that could affect the 100-year floodplain. The KRRC would submit a letter of map revision (LOMR) to FEMA to provide recent hydrologic and hydraulic modeling, and updates to the land elevation mapping so FEMA can update its 100-year floodplain maps downstream from

Iron Gate Dam, as needed. While the State Water Board anticipates that implementation of the Downstream Flood Control Project Component and the Emergency Response Plan, and any modifications developed through the FERC process that provide the same or better level of protection against flood damage, would reduce impacts to less than significant, because the State Water Board cannot ensure their implementation this impact is significant and unavoidable (EIR, pages 3-632 – 3-633).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in a change to the 100-year floodplain inundation area resulting in exposure of structures to a substantial risk of damage due to flooding.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project dams would remain and there would be no change to the 100-year floodplain. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.6-3 (exposing structures to a substantial risk of damage due to flooding)

As indicated above, the Proposed Project would result in a change to the 100-year floodplain inundation area between Iron Gate Dam (RM 193) and Humbug Creek (RM 174) due to dam removal, exposing approximately two additional habitable structures to a substantial risk of damage due to flooding. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact associated with changes to the 100-year floodplain.

However, removal of the Lower Klamath Project dams would result long-term decrease in the risk of dam failure resulting in flooding of significantly more structures downstream of the Lower Klamath Project (Potential Impact 3.6-6). In addition, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat. The long-term flood risk and other environmental benefits of the Proposed Project support the State Water Board's

approval of the Proposed Project despite the significant and unavoidable impacts associated with changes to the 100-year floodplain.

Conclusions

The State Water Board recognizes that the Proposed Project will have a significant and unavoidable flood risk for 2 structures in the 100 year floodplain, and that there is a benefit in reduction in the risk of dam failure with dam removal.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project. Thus, the State Water Board finds that impact is acceptable.

Groundwater

Overview

The Area of Analysis for groundwater impacts includes the area within 2.5 miles of Copco No. 1, Copco No. 2, and Iron Gate reservoirs (Volume I Figure 3.7-1), which encompasses the area immediately adjacent to the reservoirs where the likelihood of groundwater well impacts due to the Proposed Project is greatest, as well as areas further from the reservoirs where regional groundwater flow data are generally available (EIR, Figure 3.7 2).

The Final EIR considers whether a decline in groundwater levels could occur in existing wells adjacent to the reservoirs in response to the decrease in reservoir surface-water elevations if the dams, and therefore reservoirs, are removed as part of the Proposed Project. The Final EIR also considers whether the Proposed Project could interfere with groundwater recharge and adversely affect surface water conditions in the Klamath River. As discussed in Volume I Section 3.7, the State Water Board concludes that Potential Impacts 3.7-1 and 3.7-2 would not be significant.

CEQA Findings

The State Water Board finds that there would be no impact to groundwater resources due to implementation of the Proposed Project. The EIR explains that in light of the likely connectivity of some wells' water source with the reservoir, and in light of data gaps, it is possible that removal of the reservoir would cause a substantial decrease of groundwater levels and a corresponding decrease in production rates in existing wells to a degree that interferes with existing or planned uses. This would be a significant impact.

However, the Proposed Project includes implementation of the Groundwater Well Management Plan, as described in Volume I, Section 2.7.8.7 Groundwater Well

Management Plan and in Appendix B: Definite Plan. The Groundwater Well Management Plan is intended to identify groundwater wells that may be adversely impacted following dam removal and reservoir drawdown and provide sufficient monitoring to understand the effects, if any, on groundwater levels and quality. The Well Management Plan would further identify short and long-term measures to address and mitigate any supply impairments encountered (EIR, page 3-664).

Under the Groundwater Well Management Plan, if groundwater levels in existing wells adjacent to the Lower Klamath Project reservoirs are found to be substantially depleted following dam removal, such that production rates drop to levels that do not support designated domestic or irrigation uses, the KRRC would undertake measures to return the production rates of the affected domestic or irrigation groundwater supply wells to conditions existing prior to dam removal. Short-term measures would include actions providing temporary water supplies until long-term measures such as motor replacement, well deepening, or full well replacement are identified and implemented. The regional and local groundwater pattern of groundwater flow toward the Lower Klamath Project reservoirs suggests that the measures in the Groundwater Well Management Plan would be successful in completely addressing the identified potential impacts. Because successful implementation of the proposed short-term and long-term measures would return production rates of any affected domestic or irrigation groundwater supply wells to conditions existing prior to dam removal, there would be no significant impact on groundwater levels in existing wells adjacent to the reservoirs (EIR, page 3-664).

The State Water Board has issued a draft water quality certification which sets forth monitoring and reporting requirements for groundwater wells surrounding the Lower Klamath Project reservoirs as part of Condition 14 (EIR, page 3-665).

Because of the underlying geology, removal of the Lower Klamath Project reservoirs is not expected to interfere with groundwater recharge that could potentially affect surface water flows in the Klamath River. Sometimes, removing reservoirs from an area can result in percolation of less surface water to the underlying groundwater aquifers. However, as discussed in Section 3.7.2 Environmental Setting the reservoirs generally lie within rock valleys where groundwater recharge is expected to be low. Gannett et al. (2007) concluded that the Klamath River reaches in the Area of Analysis are gaining reaches (i.e., groundwater discharges to the stream). This assessment and the characteristics of the rock surrounding the reservoirs suggest that any surface water that may have infiltrated to groundwater aquifers under the reservoirs would likely discharge back to the river just downstream from the impoundments, rather than increasing aquifer storage. Therefore, there would be no significant impact on groundwater recharge and the resulting groundwater/surface water interactions due to the Proposed Project (EIR, page 3-665).

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on groundwater resources and no statement of overriding consideration is needed for this resource.

Water Supply/Water Rights

Overview

The Proposed Project will result in short- long-term changes to Klamath River hydrology. Over the short term the release of sediment currently trapped behind the Lower Klamath Project dams is expected to result in a period of increased turbidity. Over the long term, the Klamath River will return to a more natural, free-flowing riverine condition in the existing Hydroelectric Reach, compared to the current conditions of slower-moving reservoir habitat. The EIR analyzed whether these changes could adversely affect existing diversions of water from the Klamath River or Fall Creek, a potentially-affected tributary.

The EIR includes Section 3.8 *Water Supply/Water Rights* to analyze and mitigate potential significant impacts of the Proposed Project to the several water users that divert water from the Klamath River or Fall Creek. The Final EIR examines the potential effect of the Proposed Project on water supplies and water rights in the Area of Analysis. In general, because the reservoirs that will be removed under the Proposed Project do not store water for irrigation or environmental purposes, the Proposed Project will not affect water supplies needed for the Klamath Irrigation Project or to meet flows required under biological opinions. As discussed in detail in EIR Volume I Section 3.8, the State Water Board concludes that Potential Impacts 3.8-1, 3.8-2, and 3.8-5 will not be significant.

CEQA findings for the remaining potentially significant effects on water supply/water rights are set out below.

CEQA Findings

Potential Impact 3.8-3

The State Water Board finds that the effect of the release of stored sediment during reservoir drawdown on Klamath River geomorphology and water intake pumps downstream of Iron Gate Dam is a potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR (pages 3-680 to 3-682) explains that because the Proposed Project will result in the release of sediments currently trapped behind the Lower Klamath Project dams,

there is a potential for fine sediment deposits to cause operational problems for water diversion facilities associated with the fifteen active and inactive water rights in the reach between Iron Gate Dam and Cottonwood Creek. It is possible that such operational problems could result in injury to an existing water right or decrease water supplies below what is needed for human health and safety.

Mitigation Measure WSWR-1 will reduce the potential impact to less than significant because it requires the KRRC to identify and contact all water right holders with points of diversion on the Klamath River prior to drawdown to assess interest in further identification of impacts to each right holder's water supply. If a right-holder is interested and impacts to the right-holder are identified, the KRRC is required to provide a replacement water supply and implement measures that will allow the right holder to divert water in the same manner as before dam removal. The KRRC is required to submit reports on implementation prior to and annually for the first two years following drawdown.

Potential Impact 3.8-4

The State Water Board finds that the need to relocate the City of Yreka's water supply pipeline after drawdown of Iron Gate Reservoir under the Proposed Project is a potentially significant impact on the City of Yreka's water supply, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR (pages 3-682 to 3-683) explains that because the existing water supply pipeline for the City of Yreka passes under Iron Gate Reservoir it will have to be relocated prior to decommissioning of the reservoir to prevent damage after the reservoir has been drawn down. It is anticipated, but not certain, that disconnection of the City of Yreka pipeline for the purpose of relocation will not result in a water supply disruption. If a water supply disruption were to occur, it would constitute a significant impact.

Mitigation Measure WSWR-2 will avoid the potential significant impact because it requires the KRRC to construct a new, fully operational replacement for the section of the City of Yreka pipeline that crosses Iron Gate Reservoir prior to initiating drawdown, and to limit any water delivery outage necessary to connect the new pipeline to no more than 12 hours unless the State Water Board approves a longer outage based on information that the City of Yreka's ability to supply water will not be affected. Implementation of this measure will prevent the Proposed Project from significantly affecting the City of Yreka's water supply.

Conclusions

As explained above, the potential impacts of the Proposed Project on water supplies and water rights are either not significant, or are potentially significant but have been mitigated to less than significant. Therefore, based on the record and the findings above, no statement of overriding consideration is needed for this resource area.

Air Quality

Overview

The Proposed Project includes components that could have a significant effect on air quality but are necessary to accomplish the intended long-term water quality and fish passage improvements. Emissions would be generated by the Proposed Project's construction activities, which are associated with pre-dam removal activities, dam and powerhouse deconstruction, and restoration activities. Proposed Project construction activities in California would occur in Siskiyou County. Siskiyou County is located in the Northeast Plateau Air Basin (NPAB) and the Proposed Project is within the Siskiyou County Air Pollution Control District (SCAPCD). In determining the potential maximum daily emissions, the main dam demolition phases for Iron Gate, Copco No. 1, Copco No. 2, and J.C. Boyle, were all assumed to overlap by at least one day. Activities associated with blasting would also potentially occur during each of the main dam demolition phases. Lastly, restoration of all four dams would overlap with the four dam demolitions and blasting activities.

The EIR examines the potential effect of the Proposed Project on air quality. As discussed in detail in Recirculated Portions of the Draft EIR, Section 3.9, the State Water Board concludes that Potential Impacts 3.9-1 (pre-dam removal activities and for ROG, CO, SO₂, and PM_{2.5} emissions during dam removal and restoration activities), 3.9-2 (long-term), 3.9-3, and 3.9-5 will not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect on air quality is set out below.

CEQA Findings

Potential Impact 3.9-1 (dam removal and restoration activities, PM₁₀ and NO_x)

The State Water Board finds that NO_x exceedances of the Siskiyou County Air Pollution Control District emissions thresholds in Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants) would be a significant environmental impact and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).) The State Water Board finds that PM₁₀ exceedances of the Siskiyou County Air Pollution Control District emissions thresholds in Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants) would be a significant environmental impact but that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

Volume III, Attachment 2, Table RE-3.9-4 summarizes the unmitigated emissions from major construction activities associated with the Proposed Project including dam and powerhouse deconstruction, blasting, and restoration of the reservoir footprints and disturbed upland areas. Since these Proposed Project activities have the potential to

overlap, their daily emissions are combined and compared to emissions thresholds in the SCAPCD's Rule 6.1 (Construction Permit Standards for Criteria Air Pollutants).

As shown in Table RE-3.9-4, NOX and PM10 emissions exceed the threshold for the combined construction phase of dam removal, blasting, and restoration. As mentioned, these three phases were conservatively assumed to overlap in time, generating the maximum daily emissions. Project exceedances of NOX and PM10 emissions would be a significant and unavoidable impact without mitigation.

KRRC has proposed and agreed to implement the following five Air Quality (AQ) Mitigation Measures to reduce Proposed Project emissions of NOX and PM10.

Mitigation Measure AQ-1 - Off-Road Construction Equipment Engine Tier

For the construction activities occurring within California, any off-road construction equipment (e.g., loaders, excavators, etc.) that are 50 horsepower or greater must be equipped with engines that meet the EPA Tier 4 Final emissions standards for off-road compression-ignition (diesel) engines, unless such an engine is not available for a particular item of equipment. To the extent allowed by CARB Off-Road Diesel Fueled Fleets regulations, Tier 3 and Tier 4 interim engines will be allowed when the contractor has documented, with appropriate evidence, that no Tier 4 Final equipment or emissions equivalent retrofit equipment is available or feasible (CARB 2016c). Documentation may consist of signed statements from at least two construction equipment rental firms.

Mitigation Measure AQ-2 - On-Road Construction Equipment Engine Model Year

Any heavy-duty on-road construction equipment must be equipped with engines that meet the model year (MY) 2010 or newer on-road emission standards.

Mitigation Measure AQ-3 - Heavy-Duty Trucks Engine Model Year

Any heavy-duty trucks used to transport materials to or from the construction sites must be equipped with engines that meet the MY 2010 or later emission standards for on-road heavy-duty engines and vehicles. Older model engines may also be used if they are retrofitted with control devices to reduce emissions to the applicable emission standards.

Mitigation Measure AQ-4 - Blasting-related Dust Control Measures

Dust control measures will be incorporated to the maximum extent feasible during blasting operations at Copco No. 1 Dam. The following control measures will be used during blasting activities as applicable: Conduct blasting on calm days to the extent feasible. Wind direction with respect to nearby residences must be considered. Design blast stemming to minimize dust and to control fly rock.

Mitigation Measure AQ-5 - General Construction Dust Control Measures

To reduce fugitive dust emissions, KRRC shall implement the following measures:

Water all exposed surfaces as appropriate to control fugitive dust through sufficient soil moisture. Under normal dry-season conditions this is generally a minimum of two times daily. Watering of exposed surfaces is not necessary when soils are already sufficiently wetted (e.g., during rain). Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

Install stabilized construction entrances where appropriate, to include geotextile fabric and/or coarse rock to manage the amount of soil tracked onto paved roadways by motor vehicle equipment, and suspended in runoff, from the active construction sites.

KRRC will include these specifications, or modifications thereto that provide comparable benefits, in its project description for approval by the Federal Energy Regulatory Commission in its license surrender order.

With the implementation of Mitigation Measures AQ-1 through AQ-5, construction emissions from the Proposed Project would not be significant for PM10. However, even with implementation of Mitigation Measures AQ-1 through AQ-5, construction emissions from the Proposed Project would still result in significant and unavoidable impacts from NOX. In addition to Mitigation Measures AQ-1 through AQ-5, Volume III, Attachment 2, Appendix N describes different or additional fugitive dust reduction measures and exhaust reduction measures that could reduce emissions of NOx and PM10 from the Proposed Project. However, overseeing development and implementation of such measures does not fall within the scope of the State Water Board's water quality certification authority and the State Water Board cannot ensure their implementation. Without an enforcement mechanism, such measures cannot be deemed feasible for the purposes of CEQA.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal activities (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would still result in significant impacts during construction from NOx.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project dams would remain in place and no construction would occur. Therefore, no NOx emissions would be generated and there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.9-2 (short-term)

The State Water Board finds that the conflict with or obstruct with implementation of the California Regional Haze Plan is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will

reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

To comply with the USEPA Regional Haze Rule, the EIR explains that CARB developed a Regional Haze Plan (2009 Plan), which sets out a long-term path towards attaining improved visibility in Class 1 federal lands, with the goal of achieving visibility which reflects natural conditions by year 2064. The 2009 Plan identifies the pollutant emissions that contribute to impairing visibility, which include SOX, NOX, PM10, PM2.5, ROG, and ammonia (NH3).

As indicated under Volume III Attachment 2 Potential Impact 3.9-1, the Proposed Project's construction activity will generate emissions of several of these haze-causing pollutants including ROG, NOX, SOX, PM10, and PM2.5. The concentrations of haze-causing pollutants that would be emitted from the Proposed Project's construction activity have the potential to contribute to visibility impairment in the Northern California sub-region in the short-term. Due to the temporary nature of the Proposed Project's construction activity, it is not anticipated that the Proposed Project would produce significant concentrations of haze-causing pollutants. However, the contribution of the Proposed Project is conservatively assumed to conflict with the goals of the 2009 Plan without mitigation.

The 2009 Plan, the Regional Haze Rule requires that the state consider measures to mitigate the impacts of construction activities in their strategy for achieving their interim progress goals. In the discussion of construction activity mitigation in the 2009 Plan, it emphasizes the anticipated emissions reductions from CARB regulations for off-road vehicles and local air district regulations for controlling fugitive dust. The 2009 Plan does not recommend project-specific mitigation measures that would reduce the emission of haze-causing pollutants and provide consistency with the Plan and the interim progress goals. As discussed under Potential Impact 3.9-1, Air Quality Mitigation Measures AQ-1 through AQ-5 will be implemented for the Proposed Project to reduce the emissions of NOX and PM10. Although not specifically recommended in the 2009 Plan, these Air Quality Mitigation Measures, along with existing regulatory requirements, will ensure consistency with the 2009 Plan. Therefore, with the implementation of mitigation, the Proposed Project would not conflict with the 2009 Plan's short-term goals.

Potential Impact 3.9-4

The State Water Board finds that short-term exposure of sensitive receptors to airborne asbestos is a potentially significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

As discussed in Volume III, Attachment 2, Section 3.9.2.6 Air Quality-Toxic Air Contaminants, detectable asbestos above 0.1 percent was identified in several materials in the structures proposed for demolition (e.g., surfacing materials, thermal

system insulation, and miscellaneous materials) that could become airborne during Project activities. Asbestos-related work (i.e., abatement and disposal of asbestos containing materials) would be performed by KRRC and its representatives in compliance with, as relevant, local, state, and federal regulations including California Division of Occupational Safety and those implemented by the SCAPCD (KRRC 2019c/KRRC 2019a). Compliance with applicable regulations related to the handling of hazardous materials is included as **Mitigation Measure HZ-1** Hazardous Materials Management in Volume I Section 3.21 Hazards and Hazardous Materials. Implementation of this mitigation measure would reduce potential impacts to workers and the closest sensitive receptors from airborne asbestos to less than significant levels.

Statement of Overriding Considerations

As indicated above, the Proposed Project NO_x emissions from construction of the Proposed Project would be a significant and unavoidable short-term impact.

However, the Proposed Project would beneficial environmental effects in other areas. For example, the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax traillii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact related to NO_x emissions during construction.

Conclusions

The State Water Board recognizes that the Proposed Project will result in a significant and unavoidable impact from NO_x construction emissions. The Proposed Project will also result in significant environmental benefits.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the short-term exceedance of NO_x thresholds to be acceptable.

Greenhouse Gas Emissions

Overview

The Proposed Project includes components that could have a significant effect related to greenhouse gases emissions (GHGs) but are necessary to accomplish the intended long-term water quality and fishery improvements. and operational emissions.

The EIR examines the potential effect of the Proposed Project related to GHG emissions and changes in energy production. As discussed in detail in Recirculated Portions of the Draft EIR, Section 3.10, the State Water Board concludes that Potential Impacts 3.10-4, 3.10-5, 3.10-6, and 3.10-7 (state plan) will not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with GHGs are set out below.

CEQA Findings

Potential Impact 3.10-1

The State Water Board finds that the generation of direct GHG emissions from construction and operation of the Proposed Project is potentially a significant environmental effect, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR's discussion of Potential Impact 3.10-1 explains that on- and off-site construction equipment, construction worker commuting, and haul truck emissions would result in direct short-term construction GHG emissions. Table 3.10-10 of the Recirculated Portions of the EIR summarizes the total unmitigated emissions associated with the Proposed Project's construction-related and operational emissions. The Proposed Project would result in 20,128 MTCO₂e of emissions from construction activity. As shown in Table 3.10-10, no net increase in emissions would result from operation of the hatcheries following dam removal for eight years. While exceedance of the no net increase threshold for GHG emissions from Proposed Project's construction activity would be a significant impact without mitigation, with implementation of mitigation measure ENR-1 the Proposed Project would meet the no net increase threshold and no significant impact would occur.

Mitigation Measure ENR-1, Purchase of Carbon Off-Sets, would offset all construction-related emissions from the Proposed Project.

Mitigation Measure ENR-1 – Purchase of Carbon Off-Sets: Prior to the start of pre-dam removal activities and any construction activities, the KRRC shall purchase and retire carbon offsets for the estimated 20,128 MTCO₂e of construction GHG emissions that will be generated by the Proposed Project. The purchase of carbon offsets for the Proposed Project shall occur according to the following criteria:

- “Carbon Offset” shall mean an instrument issued by any of the following: CARB, Climate Action Reserve, California Air Pollution Control Officers Association, the APCD, or any other equivalent or verifiable registry.
- Any carbon offset that is used to reduce the Project’s GHG emissions shall meet the requirements of CEQA Guidelines Section 15126.4(C)(3) and meet the following criteria:
 - 1) Real – They represent reductions actually achieved (not based on maximum permit levels).
 - 2) Additional/surplus – They are not already planned or required by regulations or policy (i.e., not double counted).
 - 3) Quantifiable – They are readily accounted for through process information and other reliable data.
 - 4) Enforceable – They are acquired through legally binding commitments/agreements.
 - 5) Validated – They are verified through the accurate means by a reliable third party.
 - 6) Permanent – They will remain as GHG reductions in perpetuity.

Potential Impact 3.10-2

The State Water Board finds that the generation of direct GHG emissions from reservoir sediments during drawdown would be a significant environmental impact over the short-term and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that following initiation of reservoir drawdown, temporary emissions of GHGs would result from changes in reservoir sediment pore pressures due to drawdown, as well as exposure of previously submerged sediment-associated organic matter to aerobic conditions and subsequent transport of 1/3 to 2/3 of the reservoir sediment deposits through the Middle and Lower Klamath River and into the Pacific Ocean Nearshore Environment. Organic matter in remaining sediment deposits would also partially oxidize once exposed to air. The majority of the aforementioned temporary GHG emissions would occur within six months of drawdown.

As shown in Table 3.10 11 and Table 3.10 12 of the Recirculated Draft EIR, the combined temporary GHG emissions associated with reservoir sediments would be up to approximately 19,300 MTCO_{2e}. Although this represents a relatively large amount of temporary emissions, it should be noted that oxidation of organic matter in land and riverine systems is part of the natural ‘fast carbon cycle’ that includes GHG emissions from terrestrial and aquatic ecosystems (Ciais et al. 2013) (see also Section 3.10.2 Greenhouse Gas Emissions – Greenhouse Gas Emissions and Global Climate Change). Since any amount above existing conditions would represent a net increase in GHG emissions, this would be a significant impact.

The potential for CH₄ emissions during drawdown would not be reduced by dredging or altering the timing of drawdown, as oxidation of organic matter associated with the reservoir sediments would produce CO₂ emissions as soon as the overlying reservoir water was drained and the sediments were exposed to water with higher levels of dissolved oxygen and oxygen in atmosphere. In addition, CH₄ emissions may be increased if water level fluctuations continued over several years.

As noted under Potential Impact 3.10-1, the CARB Scoping Plan identifies the purchase of carbon offsets as a viable method to reduce or eliminate the impact of GHG emissions from new development (CARB 2017b). However, purchase of offsets for sediment emissions is not feasible in light of federal preemption, absent applicant agreement. While the applicant has proposed to purchase carbon credits to offset direct construction emissions, the applicant has not agreed to offset emissions generated as part of the natural 'fast carbon cycle' as opposed to anthropogenic emissions generated during fossil fuel combustion that short-circuit the 'slow' part of the carbon cycle and intensify greenhouse gas effects (see also Section 3.10.2.1 Greenhouse Gas Emissions – Greenhouse Gas Emissions and Global Climate Change). In the absence of applicant agreement, such a mitigation measure would not be enforceable, and therefore not feasible.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would generate GHG emissions and still result in significant impacts during construction, since any amount above existing conditions would represent a net increase in GHG emissions.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and would not increase GHG emissions above existing conditions. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.10-3

The State Water Board finds that the generation of direct GHG emissions from conversion of the reservoir areas to riverine, wetland, and terrestrial habitat types would be a significant environmental effect and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

As discussed in Potential Impact 3.10-2, the EIR explains that freshwater streams and rivers serve as large, natural sources of CO₂ in regional and global carbon budgets. Riverine oxidation of organic matter to produce CO₂ is part of the natural cycling of carbon between the atmosphere and freshwater and terrestrial ecosystems. Compared

to existing conditions, future GHG emissions from the Lower Klamath Project reservoirs are estimated to increase, with new emission levels ranging from approximately 34,500 to 71,500 MTCO₂e annually (Volume III Attachment 2 Table 3.10 13). While the reservoir contribution to GHG production would be zero under the Proposed Project, and the increase in riparian (forest) areas in the Hydroelectric Reach would result in more carbon sequestration compared with existing conditions, the addition of restored riverine habitat would result in roughly 60 percent more annual GHG emissions from the Hydroelectric Reach area under the Proposed Project. This would be an exceedance of the no net increase threshold for GHG emissions and would be a significant impact

As the focus of the Lower Klamath Project is to restore the Klamath River and the habitat that it provides for anadromous fish, it would not be reasonable or feasible to reduce the amount of restored riverine habitat, or to interfere with the natural processing of carbon in the river, as a means of reducing annual GHG emissions under the Proposed Project. As noted under Potential Impact 3.10-1, the CARB Scoping Plan identifies the purchase of carbon offsets as a viable method to reduce or eliminate the impact of greenhouse gas emissions (CARB 2017b). However, purchase of offsets for sediment emissions is not feasible here, in light of federal preemption. In absence of an agreement from the applicant to offset emissions, such a mitigation measure would not be enforceable, and therefore not feasible

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves conversion of the reservoir areas to riverine, wetland, or terrestrial habitat types (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would generate GHG emissions and still result in significant impacts during construction, since any amount above existing conditions would represent a net increase in GHG emissions.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and would not increase GHG emissions above existing conditions. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.10-7 (local plan)

The State Water Board finds that Proposed Project has the potential to conflict with or obstruct a local plan for renewable energy or energy efficiency would be a significant environmental impact and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR identified the County of Siskiyou General Plan Energy Element (Energy Element), which was developed in 1993, as a local plan related to renewable energy or energy efficiency. Although the Energy Element is past the planning period described in

the General Plan Element (20 years), it is still relevant to assess consistency with the Energy Element for a renewable energy related project. The policies in the Energy Element encourage the development of renewable energy facilities, while minimizing potential environmental and land use effects (Siskiyou County 1993). The Energy Element is primarily forward looking and does not specifically address the removal of the Lower Klamath Project facilities or contain any policies related to maintaining such facilities. Nevertheless, Energy Element generally promotes further development of renewable energy sources in the county, and removal of an existing renewable energy source could conservatively be considered to conflict with such policies in the Energy Element. The County has confirmed this interpretation of the plan. Such a conflict cannot be feasibly mitigated. Therefore, this would be a significant and unavoidable impact.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves removal of the renewable energy source (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would conflict with the Energy Element and still result in a significant impact.

Under the Continued Operations with Fish Passage and No Project alternatives, no change to renewable energy production facilities would occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

As indicated above, the Proposed Project increases in GHG emissions from sediment release and re-establishment of a riverine system, and would conflict with the local energy plan (even as it complies with state energy plans), and that these conditions result in significant impacts. As explained above, mitigation/avoidance of these impacts is not feasible.

However, the Proposed Project would have the multiple beneficial environmental effects, including: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to GHGs.

Conclusions

The State Water Board recognizes that the Proposed Project results in significant and unavoidable impacts from GHG emissions and from a conflict with a local energy plan. The State Water Board finds that the environmental benefits of the Proposed Project outweigh these impacts, and that they are therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Geology, Soils, and Minerals

Overview

The Proposed Project would erode sediment from reservoir deposits and transport this sediment to downstream reaches of the Klamath River. Therefore, geology and soils impact analysis in the EIR focuses primarily on the geology and geomorphology of the reservoir, channel, and floodplain environments directly and indirectly affected by dam removal and the associated release of stored sediment to downstream reaches of the Klamath River. The EIR examines the potential effect of the Proposed Project on changes to geologic hazards, soil disturbance, hillslope instability, instability of embankments, sediment deposition, changes in sediment supply, bank erosion, and the availability of mineral resources. As discussed in detail in EIR Volume Section 3.11 Geology, Soils, and Minerals, the State Water Board concludes that Potential Impacts 3.11-1, 3.11-2, 3.11-3 (Iron Gate Reservoir and J.C. Boyle Reservoir) 3.11-4, 3.11-6, and 3.11-7 would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project on Geology, Soils and Minerals include long-term effects of increasing sediment supply and transport and creating a more dynamic and mobile bed downstream of Iron Gate Dam.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with geology, soils, and minerals are set out below.

CEQA Findings

Potential Impact 3.11-3 (Copco No. 1 Reservoir)

The State Water Board finds that Copco No. 1 reservoir drawdown could result in hillslope instability in reservoir rim areas and this would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The geologic assessment and slope stability analysis conducted by KRRC (Volume II Appendix B: Definite Plan – Appendix E) indicated that certain segments around Copco

No. 1 Reservoir have a potential for slope failure that could impact existing roads and/or private property (Volume III Attachment 1 Figure 3.11-10). These areas include approximately 1,780 linear feet of shore-parallel length with potential for failures to impact existing structures outside the reservoir rim. These areas include approximately 480 linear feet of slopes along Copco Road (north shore segment S11) and approximately 1,300 linear feet of slope adjacent to private property (south shore segments S5, S11a, and S12a). Twelve parcels in these areas have existing habitable structures that could potentially be impacted. Four habitable structures are located in the areas along the south shore, with an additional four structures at risk from progressive failures outside of those areas. Additional parcels and structures may experience damage and/or deformation due to nearby failure (Volume III. Attachment 1. pages AT1-732-AT1-733).

As part of the Proposed Project, KRRC includes consideration of multiple actions to offset potential impacts in reservoir rim areas where there is a high probability of slope failure (Appendix B: Definite Plan – Appendix E).

While the proposed actions are designed to reduce potential slope stability impacts, the proposed actions do not explicitly address potential impacts resulting from hillslope instability outside of those areas identified as having a high probability of slope failure or commit KRRC to implementation of their aforementioned proposed actions. Therefore, the impact of the project on hillslope instability in reservoir rim areas would be significant. However, implementation of Mitigation Measure GEO-1 would reduce the impact of slope failure in reservoir areas to less than significant.

Mitigation Measure GEO-1 – Slope Stabilization

Prior to the start of reservoir drawdown, KRRC shall offer to temporarily relocate or otherwise assist residents who reside on potentially unstable slopes on the south shore of Copco Lake, and residents on the north shore of Copco Lake whose residences may be affected by slope failures during the drawdown of the reservoir, if testing and analysis undertaken by KRRC indicates that potential slope failures and/or structural impacts related to Project activities could occur in these locations. Potentially unstable slopes currently include those listed in Appendix B: *Definite Plan – Appendix E*. Prior to reservoir drawdown, KRRC shall reroute or take other appropriate action to maintain safe conditions on Copco Road (currently includes the potential areas listed in Appendix B: *Definite Plan – Appendix E*) if testing and analysis undertaken by KRRC indicates that potential slope failures related to Project activities could affect the road.

KRRC will monitor potentially unstable areas along the Copco No. 1 Reservoir rim for the duration of reservoir drawdown and for two weeks, or longer if KRRC determines that a longer monitoring period is prudent, after the drawdown is complete. Monitoring may include inclinometers, surveys, vibrating wire piezometers, and visual inspections. Depending on the location, monitoring may involve tribal monitors (see also Mitigation Measures TCR-1, TCR-2, and TCR-3). If slope failure related to Project activities is

observed, an exclusion zone will be established around the unstable area and the KRRC will monitor the unstable area.

Throughout drawdown activities, and when the areas are safe to inspect, the KRRC shall inspect any Project-related slope failures that occurred during and following drawdown, and implement slope stabilization measures, as appropriate. For any slope failure related to Project activities that occurs during drawdown or the year following drawdown and that adversely impacts a structure or public facility or impacts or has a material potential to impact water quality or volitional fish passage, KRRC will fund or implement the following actions:

1. By agreement with the property owner, repair or move affected structures and/or purchase affected property; or
2. Repair and/or re-align affected road segments; or
3. Regrade and/or engineer structural slope improvements (e.g., retaining walls, buttresses, drilled shafts or other structural elements that could be installed to resist slope movement); and
4. Revegetate affected areas to the extent revegetation is feasible and appropriate.

Potential Impact 3.11-5

The State Water Board finds that the Proposed Project would result in a significant impact associated with reservoir drawdown resulting in substantial short-term sediment deposition in the Middle Klamath River from Iron Gate Dam to confluence with Cottonwood Creek due to erosion of reservoir sediment deposits and a long-term change in sediment supply and transport due to dam removal. The State Water Board finds that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

Short-term (2-year) SRH-1D model simulations focused on reservoir sediment erosion and fine sediment load in the Klamath River following drawdown indicate up to about 0.9 feet of reach-averaged sediment deposition between Bogus Creek and Willow Creek (RM 188.0) (Volume III Attachment 1 Figure 3.11-15), although conservative long-term (50-year) simulations focused on channel bed elevation change indicate that fine and coarse sediment deposition within 2 years of dam removal may be up to 1.7 feet (Volume III Attachment 1 Figure 3.11-18) (USBR 2012). Short-term simulations also indicate up to about 0.4 feet of sediment deposition from Willow Creek to Cottonwood Creek (Volume III Attachment 1 Figure 3.11-15), although conservative long-term (50-year) simulations indicate that fine and coarse sediment deposition within 2 years of dam removal may be up to 0.9 feet (Volume III Attachment 1 Figure 3.11-18) (USBR 2012). Model simulations indicate that reaches located farther downstream will change little (< 0.5 feet of erosion or deposition) (Volume III Attachment 1 Figure 3.11-15; Figure 3.11-18) (USBR 2012). Any fine sediment that does deposit on the channel

bed in the short-term would be transient and subject to remobilization. Smaller quantities of coarse sediment would be less transient, as discussed below in relation long-term sedimentation. Eight miles of the Klamath River mainstem channel from Iron Gate Dam to Cottonwood Creek could potentially be affected by significant short-term sediment deposition released upon dam removal, representing 4 percent of the total mainstem channel length downstream of Iron Gate Dam (190 miles) (Volume III Attachment 1 pages AT1-745 to AT1-748).

Long-term (50-year) SRH-1D model simulations also indicate that 0.8 to 1.7 feet of aggradation could result from the Proposed Project between Iron Gate Dam and Cottonwood Creek (i.e., simulations based on a median start year).

As discussed above in Potential Impact 3.2-3, there is no feasible mitigation to reduce the sediment releases of the Proposed Project.

Analysis of potential alternatives to the Proposed Project shows that mobilization of reservoir sediment deposits in the much larger Copco No. 1 and Iron Gate reservoirs would still occur under the Partial Removal, Two Dam Removal, Three Dam Removal, and No Hatchery alternatives. Thus, compared with the Proposed Project, the same degree of mobilization of Lower Klamath Project reservoir sediment deposits would occur under these alternatives.

Under the Continued Operations with Fish Passage and No Project alternatives, dam removal and associated mobilization of reservoir sediment deposits would not occur. Therefore, no sediment impacts would occur under these alternatives. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.11-5

As indicated above the Proposed Project would result in a significant and unavoidable short-term Geology Soils and Minerals impact of sediment deposition in the Middle Klamath River from Iron Gate Dam to the confluence with Cottonwood Creek due to erosion of reservoir sediment deposits. The Proposed Project would also result in a Geology, Soils and Minerals long-term benefit of increasing sediment supply and transport and creating a more dynamic and mobile bed downstream of Iron Gate Dam. This long-term benefit to the reach below Iron Gate Dam outweighs the short-term impact of sediment deposition in the reach.

Conclusions

The State Water Board recognizes that the Proposed Project has the potential to cause short-term, significant and unmitigable impacts from sediment deposition in the reach

from Iron Gate Dam to Cottonwood Creek. The State Water Board further notes the anticipated long-term benefit of the Proposed Project on sediment transport in the reach below Iron Gate Dam. The State Water Board finds that the long-term improvements in sediment transport outweigh the significant and unmitigable short-term impact of deposition, and that the impact is therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Historical Resources and Tribal Cultural Resources

Overview

The EIR examines the potential effect of the Proposed Project on historic and tribal cultural resources. As discussed in detail in Section 3.12 Historical Resources and Tribal Cultural Resources, the State Water Board concludes that Potential Impacts 3.12-3 (Hydroelectric Reach between J.C. Boyle Dam and Copco No. 1 Reservoir; Hydroelectric Reach between J.C. Boyle Dam and Copco No. 1 Reservoir) 3.12-9, 3.12-10, and 3.12-14 (Hydroelectric Reach excluding Iron Gate Dam, Middle Klamath River downstream of Humbug Creek, Lower Klamath River, Klamath River Estuary) would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project include long-term beneficial effects on the Klamath River fishery of predicted increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey) resulting from improved river ecosystem function and increased habitat access; and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects on historic and tribal cultural resources are set out below.

CEQA Findings

Potential Impact 3.12-1

The State Water Board finds that the Proposed Project would result in a significant impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board

further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that tribal cultural resources are known to be present within Area of Analysis Subarea 1 (Volume III, Figure 3.12 2).

Due to the nature of ground-disturbing activities and a general increase in the level of activity (e.g., construction, surveys) within the Area of Analysis Subarea 1, pre-dam removal activities that would involve ground disturbance have the potential to result in the following significant impacts to known TCRs identified in Confidential Appendices P and Q, as well as unknown TCRs (EIR, page 3-817):

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the TCR would be materially impaired; and/or
- Exposure or substantial movement of TCRs leading to increased access and looting above levels occurring under existing conditions.

Note that TCR sites located within the reservoir fluctuation zones (Confidential Appendices P and Q) may be periodically at risk of looting during low water periods under existing conditions and may have suffered significant degradation in the existing condition (EIR, page 3-818).

Implementation of mitigation measures TCR-1 (TCRMP), TCR-2 (LVPP), TCR-3 (IDP), TCR-4 (Endowment) would reduce these impacts considerably, and, for many resources is expected to avoid impacts completely, through the design and implementation of construction plans to completely avoid impacts, or on-the-ground modifications to Proposed Project implementation to avoid impacts (EIR, page 3-818).

In light of the high density of TCRs within the Limits of Work, and the nature of the construction involved, significant risk remains that other TCRs may sustain damage that results in a material impairment of the resource's significance. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, and the likelihood of significantly impairing other types of TCRs in light of the type of construction actions and the density of resources, the impact would remain significant and unavoidable (EIR, page 3-818).

Mitigation Measure TCR-1 – Develop and Implement a Tribal Cultural Resources Management Plan

The KRRC shall develop a Historic Properties Management Plan (HPMP). The HPMP shall include measures to avoid, minimize, or mitigate the Project's adverse impacts to TCRs. The HPMP shall include a Tribal Cultural Resources Management Program (TCRMP), which will state such measures.

KRRC shall develop the TCRMP in consultation with Affected Tribes. The KRRC shall finalize the HPMP during FERC's hearing on the license surrender application for the

Project. The KRRC shall propose the HPMP for FERC's approval as a term of the license surrender order.

In developing the TCRMP, KRRC shall engage in good faith consultation with the Affected Tribes that are traditionally and culturally affiliated with a specific portion of the APE or with potentially affected TCRs. Where a particular tribe has identified a specific TCR, the primary consultation about that TCR shall be with the affected tribe. All such consultation shall be subject to the schedule for HPMP development. If consensus cannot be reached during TCRMP development, KRRC shall record the disputed issues, positions on the disputed issues, and KRRC's proposed resolution, in the HPMP that is submitted to FERC.

The TCRMP shall include the following elements consistent with applicable law:

1. The TCRMP shall include an inventory of known and potential TCRs that could be affected by the Project. Appendix B: Definite Plan – Appendix L includes a preliminary inventory of such resources. KRRC will continue to develop the inventory through the consultation process for the license surrender application under authority of the National Historic Preservation Act (NHPA) Section 106.

Based on AB 52 consultation, KRRC acknowledges that the Shasta Indian Nation and Shasta Nation are primarily concerned with TCRs associated with Iron Gate, Copco No. 1, and Copco No. 2 reservoirs, and tributary sub-watersheds such as Fall Creek, Bogus Creek, and Deer Creek. The TCRMP shall include TCRs known to the Shasta Indian Nation, which include TCRs as reflected in PacifiCorp (2004) and Daniels (2006) and as updated by Attachment 4 of the Confidential Appendix Q. The TCRMP shall include TCRs known to the Shasta Nation, which include the TCRs identified in the Confidential Appendix P. The TCRMP shall include TCRs known to other Affected Tribes.

2. The TCRMP shall include provisions to protect the confidentiality of known TCRs. The TCRMP shall also include provisions to share information collected by the KRRC with: Affected Tribes that are traditionally and culturally affiliated with the known TCR(s); regulatory agencies that have authority over protecting such resources, as necessary; or as necessary with the permission of such tribes in order to implement appropriate protective or enhancement measures. These provisions will be consistent with California Public Resources Code Section 21082.3(c).
3. The TCRMP shall assure that the Project will avoid, minimize, or mitigate adverse impacts to TCRs, consistent with California Public Resources Code section 21084.3(a). In developing the plan, the KRRC will consider measures listed in California Public Resources Code section 21084.3(b) that, if feasible, may be appropriate to avoid, minimize, or mitigate adverse impacts:

- (1) "Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - (2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - (A) Protecting the cultural character and integrity of the resource.
 - (B) Protecting the traditional use of the resource.
 - (C) Protecting the confidentiality of the resource.
 - (3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places in a manner consistent with the KHSA.
 - (4) Protecting the resource."
4. The TCRMP shall require a training program for KRRC's field personnel associated with the Project. The training program will be designed to train KRRC field personnel to work collaboratively with tribal monitors and will focus on field procedures (across the range of field personnel) as necessary for appropriate and respectful treatment of TCRs; and will be intensive and systematic, in light of the scale, complexity, and schedule of the Project undertakings.
 5. The TCRMP shall identify TCR areas that will have limited or no public access during Project implementation. During that period, the KRRC shall: install adequate signage to clearly mark areas with limited or no public access areas; install fencing where necessary and feasible to reduce access; and provide appropriate training to field personnel. Upon the recommendation of a tribe that has identified the TCR area, the KRRC may consider, and the TCRMP may include, other equally effective measures to reduce public access in lieu of (or in addition to) those identified immediately above.
 6. The TCRMP shall include site-specific mitigation measures for potentially affected TCRs. The TCRMP shall provide for ongoing consultation or site-specific mitigation refinement with the relevant Affected Tribe(s) with a traditional and cultural affiliation to an impacted TCRs, as appropriate and feasible consistent with the schedule for Project implementation.
 7. The TCRMP shall identify any areas where the KRRC, before Project implementation, shall conduct any additional cultural resource surveys, consistent with California Public Resources Code section 21074.

8. The TCRMP shall provide that the KRRC, following reservoir drawdown and dam removal, shall undertake intensive surveys of TCRs, archaeological, and other historical resources within the area of analysis, using joint teams of archaeologists and tribal monitors. The TCRMP shall specify the methods for such surveys. It shall also specify the process by which Affected Tribes will nominate, and KRRC will select and compensate tribal monitors. During this process, an Affected Tribe that is traditionally and culturally affiliated with the area may nominate tribal monitor(s) for KRRC's consideration; and KRRC shall make the selection after consultation with Affected Tribes. KRRC shall select and pay tribal monitor(s) for the purpose of Project implementation. In the event that KRRC does not select a tribe's recommended monitor, an Affected Tribe that is traditionally and culturally affiliated with the area may request participation of its recommended tribal monitor in these surveys at its own cost. KRRC's field personnel, in consultation with tribal monitors, shall record these surveys in a manner consistent with applicable law. KRRC shall provide recorded survey data pertaining to a known TCR to the Affected Tribes that are traditionally and culturally affiliated with that TCR.
9. The TCRMP shall state a range of appropriate measures, and a protocol to select from such range, to address the disturbance or exposure of known TCRs during Project implementation. The KRRC shall implement measures necessary to ensure the protection of disturbed or exposed TCRs.
10. The TCRMP shall provide that the KRRC will identify and avoid TCRs during the siting and construction of new recreational sites, to the extent feasible. The KRRC shall address potential conflicts consistent with California Public Resources Code section 21084.3(a) and (b).
11. The TCRMP shall provide for restoration actions associated with any ground disturbances such as grading and manual or machine excavation, so as to protect TCRs. The KRRC shall consider limiting or completely avoiding mechanical weed control activities (e.g., mowing, hand-weeding) or herbicide use to protect TCRs in areas identified by Affected Tribes, as necessary. In revegetation efforts, the KRRC shall incorporate specific plant species that are important to Affected Tribes with a traditional and cultural affiliation to the area at issue, to the extent that doing so is feasible and complies with the requirements of the federal and state approvals of the Project. The KRRC shall provide training regarding these actions to its field personnel.
12. The TCRMP shall incorporate the results of the KRRC's Bathymetric Survey, and specifically, the refined understanding of sediment thickness in Iron Gate and Copco No. 1 reservoirs, to inform monitoring efforts for potential exposure of TCRs during and following reservoir drawdown. Information from this review shall inform the Inadvertent Discovery Program (described below), which will be part of the TCRMP.

13. The KRRC shall consult with Affected Tribes in the planning process for the redesign and relocation of the water supply line for the City of Yreka to identify, avoid if feasible, or mitigate effects to TCRs during the siting and construction of the water supply line. The KRRC shall address potential conflicts consistent with California Public Resources Code section 21084.3 (a) and (b).
14. Consistent with KHSA Section 7.6.6, the TCRMP shall include recommended measures to identify, avoid, minimize, or mitigate effects to TCRs during modifications of Iron Gate Hatchery, consistent with California Public Resources Code section 21084.3 (a) and (b).
15. Consistent with KHSA Section 7.6.6, the TCRMP shall also include recommended measures to identify, avoid, minimize, or mitigate adverse impacts to TCRs during rehabilitation and expansion of Fall Creek Hatchery, consistent with California Public Resources Code section 21084.3 (a) and (b).
16. The TCRMP shall include a dispute resolution process in the event that, during Project implementation, Affected Tribes dispute which measures to apply to avoid, minimize, or mitigate the Project's adverse impacts to a specific TCR with which the Affected Tribes are traditionally and culturally affiliated. The process shall include neutral mediation to be undertaken consistent with the schedule for Project implementation. In consultation with Affected Tribes, the KRRC shall engage a standing mediator who is available to resolve disputes about which measures to apply (EIR, pages 3-818 – 3-821).

Mitigation Measure TCR-2 – Develop and Implement a Looting and Vandalism Prevention Program

In consultation with Affected Tribes and jurisdictional law enforcement, the KRRC shall develop and implement a Looting and Vandalism Prevention Program (LVPP), specifically to deter looting and vandalism to TCRs associated with the Project. The LVPP, which may be part of the TCRMP, shall include the following elements consistent with applicable law:

1. The LVPP shall include appropriate measures to deter looting and vandalism during Project Implementation. The KRRC shall implement these measures for a minimum of 3 years following completion of dam removal, or until KRRC has transferred applicable Parcel B lands to the States or third parties under the terms of the KHSA Section 7.6.4.
2. The LVPP shall specify the frequency of monitoring efforts of known TCR areas and other areas subsequently identified by the KRRC or tribal monitors during Project implementation. Monitoring frequency shall not be less than quarterly, with allowances for additional targeted monitoring that is triggered by natural or opportunistic events, such as a large magnitude flood event. The LVPP shall

provide that monitoring need and frequency will vary depending on the level of risk associated with various activities during Project implementation.

3. The LVPP shall include a training program on looting and vandalism prevention and site documentation, for the benefit of KRRC's field personnel as well as tribal monitors.
4. The LVPP shall include protocols for communications and reporting to law enforcement and other relevant state and federal agencies, consistent with applicable law.
5. The LVPP shall include appropriate measures to restrict public access to specific Project areas where known TCRs, or those identified through inadvertent discovery, are located. KRRC shall implement these measures until it has transferred the Parcel B lands to the states or third parties under KHSA Section 7.6.4. Specific measures to be considered shall include: fencing; posting of signs; strategic plantings; strategic routing of access roads, boating access points and trails; specific recommendations for land use or land transfer in the KHSA Section 7.6.4 process or other means determined necessary and feasible to protect TCRs from opportunistic looting and public access (authorized and unauthorized).
6. The LVPP shall include appropriate measures to prevent or restrict public access to reservoir areas during reservoir drawdown and dam removal.
7. The LVPP shall include appropriate measures to prevent or restrict public access to newly exposed reservoir areas following reservoir drawdown. Such measures shall limit use of off-road vehicle paths and informal roads and tracks, and unauthorized use of developed and dispersed recreation sites. KRRC shall implement these measures until it transfers Parcel B lands to the states or third parties pursuant to KHSA Section 7.6.4, subject to an assignment of continuing responsibilities by the transferee (EIR, pages 3-821 – 3-822).

Mitigation Measure TCR-3 – Develop and Implement Inadvertent Discovery Plan (IDP)

In consultation with Affected Tribes, the KRRC shall develop and implement an Inadvertent Discovery Program (IDP), which shall be a part of the TCRMP. The IDP shall establish protocols for the discovery of unanticipated or previously unknown TCRs, including human burials or human remains discovered during Project implementation. The IDP shall provide for compliance with applicable law regarding cultural resources and human remains; state work site protocols to be followed in the event of an inadvertent discovery; and identify appropriate point of contacts associated with the protocols. The IDP shall include protocols for work in areas known to have a high chance of inadvertent discoveries, including the Iron Gate, Copco No. 1, Copco No. 2

reservoir areas, as well as the altered FEMA 100-year floodplain area between Iron Gate Dam and Humbug Creek following dam decommissioning.

The IDP shall include the following specific elements:

1. The IDP shall acknowledge that there may be unknown TCRs in association with TCRs known to the Shasta Indian Nation, which include TCRs as reflected in PacifiCorp (2004) and Daniels (2006) and as updated by Confidential Attachment 4 of the Confidential Appendix Q.
2. The IDP shall state protocols that KRRC shall implement for sites that are addressed under California Public Resources Code 5097.993 and/or for sites found to contain TCRs, human burials, or human remains during and after drawdown activities. These protocols shall identify appropriate agency and tribal contacts for such situations. In the case of human remains in California, the KRRC shall also notify the county coroner and follow the procedures stated in California Health and Safety Code section 7050.5(b) to the extent feasible. Upon discovery, the KRRC's environmental monitor shall notify the KRRC's qualified archaeologist of the discovery, and the KRRC's qualified archaeologist shall complete a letter report to assess and document the discovery. The KRRC shall circulate the letter report to Affected Tribes, the Native American Heritage Commission for inadvertent discoveries on private and state lands in California, and other appropriate land management agencies, within 72 hours of the discovery.
3. The IDP shall state protocols that KRRC will implement for reservoir drawdown or restoration activities following an inadvertent discovery. Such protocols shall be consistent with the Definite Plan and shall take into account potential downstream environmental impacts; cultural resource impacts in the Iron Gate, Copco No. 1, Copco No. 2 reservoir areas; mitigation and stabilization for tribal and cultural resources found in the APE outside of the reservoirs; and mitigation in the altered FEMA 100-year floodplain area between Iron Gate Dam and Humbug Creek following dam decommissioning. The IDP shall identify the measures that the KRRC will follow to protect TCRs following an inadvertent discovery.
4. The IDP shall provide for tribal monitors to participate in monitoring during Project implementation. The tribal monitors shall be present as feasible and appropriate pursuant to the schedule for different phases of Project implementation, to address unknown TCRs that are exposed. Pursuant to item (6), the monitoring schedule for tribal monitors shall consider that monitoring frequency and duration may differ by geographic area or Project phase or activity.
5. The IDP shall provide for the development and implementation of a training program regarding the inadvertent discovery of cultural resources and human

remains during Project activities. All of KRRC's field personnel and tribal monitors shall be instructed on site discovery, avoidance, and protection measures, including information on the statutes protecting cultural resources.

6. The IDP shall establish the frequency of specific monitoring efforts during Project implementation in identified areas where the discovery of unidentified TCRs may be likely given currently available information and other known archaeologically or culturally sensitive areas that may be identified by the tribal monitors. Monitoring locations will be specified during the development of the Inadvertent Discovery Program in the HPMP. Monitoring frequency during Project activities that cause ground disturbance shall not be less than quarterly, with allowances for additional targeted monitoring that is triggered by natural or opportunistic events during the reservoir drawdown or a subsequent large magnitude flood event. Such monitoring efforts shall be led by KRRC's archaeologists in consultation with tribal monitors and shall include the field reconnaissance of newly exposed sediments for surface features, to include, but not be limited to intensive, pedestrian survey for areas with relatively low slopes (<30 percent) and that are sufficiently dried to permit for safe access for pedestrian survey and to permit safe access for survey vehicles. In areas where intensive, pedestrian survey is not possible, KRRC in consultation with tribal monitors may use low-elevation aerial survey methods (e.g., unmanned aerial vehicles) or barge surveys to accomplish monitoring.
7. The IDP shall include a timeline, in consultation with Affected Tribes, for completing treatment measures and assessing California Register significance for discovered cultural resources and human burials or remains.
8. The IDP shall include dispute resolution procedures in the event that Affected Tribes disagree on which measures to apply to protect TCRs following inadvertent discovery. When the inadvertent discovery occurs on private or state lands in California, the procedures set forth in California Public Resources Code section 5097.98 will be followed where feasible, including mediation pursuant to California Public Resources Code section 5097.94. To the extent that inadvertent discoveries occur on federal or tribal lands, appropriate procedures under tribal or federal law will apply (EIR, pages 3-822 – 3-824).

Mitigation Measure TCR-4 – Endowment for Post-Project Implementation

The TCRMP shall include a provision for the KRRC to provide funding for an endowment or other appropriate organization (e.g., a non-profit mutual benefit organization) to protect and enhance TCRs that are exposed due to the Project implementation on state and private lands in California, on a long-term basis following license surrender. This endowment shall include funding for monitoring, including supplementing or enhancing law enforcement resources, and shall also be available to cover measures that will be implemented following license surrender, including

measures related to looting and vandalism protections. The endowment shall be governed in a manner that is representative of Affected Tribes that are traditionally and culturally affiliated with the TCRs impacted by Project Implementation. The KRRC shall consult with Affected Tribes, with the assistance of the standing mediator during development of the TCRMP, to develop the specifications for funding and governance (EIR, page 3-824).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts on known Tribal Cultural Resources as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no short-term impacts on known Tribal Cultural Resources. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.12-2

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown, previously submerged Tribal Cultural Resources due to shifting, erosion, and exposure associated with drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that the increased likelihood of impacts to known or as-yet unknown previously submerged TCRs due to drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs would be a significant impact in light of the following:

- Increased potential for shifting, erosion, and/or exposure of TCRs that results in destruction or material alteration of the resources in a way that would undermine current or historical significance, in light of an existing condition in which the TCRs are under water.
- The large number of known TCRs, and the high potential for the presence of as-yet unknown TCRs, that are currently submerged by Copco No.1, Copco No. 2, and/or Iron Gate reservoirs.

Implementation of Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), TCR-3 (IDP), and TCR-4 (Endowment) (as included above under Potential Impact 3.12-1) would reduce these impacts considerably, and, for many resources is expected to avoid impacts completely or to reduce the impact to less than significant. While drawdown is not generally anticipated to have large effects on material below the earth's surface at the time of reservoir inundation, where slumping is a risk and where so many sites are involved (including some sites that have been subject to wave action with an erosive effect) material risk remains that some burials may be affected. While treating remains and associated funerary objects with the appropriate respect and procedures can reduce and avoid compounding the harm from the initial exposure or movement, it cannot do so fully. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, the impacts would remain significant and unavoidable (EIR, page 3-827).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to known or unknown, previously submerged Tribal Cultural Resources associated with drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no impacts to known or unknown, previously submerged Tribal Cultural Resources since reservoir drawdown would not occur. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-3 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could result in minor alterations to the FEMA 100-year floodplain inundation area downstream of Iron Gate Dam, along the 18-river mile stretch of the Middle Klamath River between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012c). Changes in the extent of the floodplain

inundation area in Area of Analysis Subarea 2 (Figure 3.12 3) could increase the risk of flood damage to TCRs that are not currently located within the FEMA 100-year floodplain but would be following dam removal, where flood damage could involve physical destruction or relocation of TCRs such that the significance of the TCR would be materially impaired. This would be a significant impact in the short term and long term. Implementation of TCR-1, TCR-2, and TCR-3 would reduce impacts, although for the reasons described in Potential Impact 3.12-1, the impacts would remain significant and unavoidable (EIR, pages 3-830 – 3-831).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no impacts to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-3 (Yurok Reservation (approximately RM 0 to RM 45) along Lower Klamath River and Klamath River Estuary)

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources located Yurok Reservation (approximately RM 0 to RM 45) along Lower Klamath River and Klamath River Estuary due to erosion or flood disturbance associated with reservoir drawdown, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that there is the potential for the morphology of the Klamath River Estuary to change in light of sediment releases from the drawdown of the reservoirs (see Potential Impact 3.2-3). These changes to the estuary have a low-risk potential to affect estuary-based Yurok Tribe TCRs; however, there is some risk of potential impacts that would not occur absent implementation of the Proposed Project. The Yurok Tribe has adopted ordinances and policies to address impacts to cultural resources on the Yurok Reservation, which includes the Klamath River Estuary. In the unlikely event that such Proposed Project-related impacts would occur to resources in the area of the Klamath River Estuary, implementation of Mitigation Measure TCR-5 would reduce the potential impacts to less than significant (EIR, page 3-831).

Mitigation Measure TCR-5 – Implementation on Yurok Reservation

Mitigation Measures TCR-1, TCR-2, and TCR-3 do not apply on the Yurok Reservation. The Yurok Tribe's Cultural Resource Ordinance and Inadvertent Discovery Policy shall apply to such TCRs on the Yurok Reservation (EIR, page 3-831).

Potential Impact 3.12-4

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that direct physical disturbance associated with blasting and other removal techniques could significantly impact those TCR sites that directly overlap with the blasting locations. The KRRC proposes complete removal of dam facilities, including, in some instances, excavation of concrete below the existing streambed level, in order to prevent future development of fish barriers as the river morphology changes. Removal of the concrete dam structures would require blasting and drilling which could destroy, relocate, or alter those TCRs sites that directly overlap with the blasting locations or their immediate surroundings such that the significance of these TCRs would be materially impaired (EIR, page 3-832).

There is at least one TCR that was present at Copco No. 1 before dam construction that would be potentially impacted. It is unknown the extent to which the resource survives currently as it is no longer accessible. To the extent the site still exists, removal of the dam has a high likelihood of significantly degrading the site. There is also the potential for as-yet unknown sites to be impacted within the blasting zone, or by other techniques associated with the removal of these features, in light of the density of sites in the Hydroelectric Reach (EIR, page 3-832).

Implementation of mitigation measures TCR-1 (TCRMP), TCR-2 (LVPP), TCR-3 (IDP), and TCR-4 (Endowment) (as discussed above under Potential Impact 3.12-1) would reduce impacts to TCRs associated with dam removal activities, but impacts would remain significant and unavoidable (EIR, page 3-832).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with dam removal.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other construction techniques, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known or unknown Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no construction that would have an impact to known or unknown Tribal Cultural Resources. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.12-5

The State Water Board finds that ground disturbance associated with Proposed Project reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction and ongoing road and recreation site maintenance during operation could physically disturb known Tribal Cultural Resources and result in a significant impact. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that within the reservoir footprint portions of the Area of Analysis Subarea 1, numerous TCR sites have been identified,. Additionally, there may be many as-yet unknown TCRs located within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs. Artifacts within the reservoir footprint may be materially impaired through physical demolition, destruction, relocation, or alteration by construction equipment (e.g., tilling) or hand tools (e.g., shovels for planting trees) during the reservoir restoration activities of riparian, floodplain, and wetland habitat within former reservoir areas and upland areas, as well as ongoing road maintenance and potential recreation site construction and maintenance, if any (EIR, page 3-832).

Implementation of Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), TCR-3 (IDP), and TCR-4 (Endowment) would reduce these impacts considerably, and, for most resources is expected to avoid impacts completely, through designing restoration plans

to completely avoid impacts, or by on-the-ground changes to implementation to avoid impacts. In light of the high density of TCRs in the restoration areas, and because some of the contemplated restoration involves significant earth-moving with heavy equipment, such as potentially regrading areas and enhancing wetlands, significant risk remains that other TCRs may sustain damage that results in a martial impairment of the resource's significance. In light of the particular harm of exposing human remains even where they are treated appropriately after exposure, and the likelihood of significantly impairing other resources in light of the type of construction actions and the density of resources, the impact would remain significant and unavoidable (EIR, pages 3-834 – 3-835).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar ground disturbance impacts that could physically disturb known Tribal Cultural Resources as the Proposed Project, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, known Tribal Cultural Resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no construction or maintenance impacts on known Tribal Cultural Resources. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.12-6

The State Water Board finds that the Proposed Project would result in a significant impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities at Iron Gate, Copco No. 1, and Copco No. 2. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that revegetation activities would reduce erosion of fine sediments (Volume II Appendix B: Definite Plan – Appendix H) and would physically cover the remaining sediment deposits with a variety of vegetation, thus decreasing the potential

for exposure and looting of TCRs located within the reservoir footprints. However, in general, sensitive areas located within the reservoir footprints would be subject to exposure and increased access since they would no longer be partially or completely covered by reservoir waters. This could increase the potential for looting of TCRs above levels occurring under existing conditions. The potential severity of this impact is underscored by significant anecdotal evidence of an extensive looting problem in the area, and by statements made by tribal members regarding the deep impact of past and ongoing looting, particularly in light of a history of repeated dispossession in the area (EIR, pages 3-835 – 3-836).

Implementation of Mitigation Measure TCR-2 (LVPP) and TCR-4 (as discussed above under Potential Impact 3.12-1) would significantly reduce the impacts of looting in the short term and long term. However, illegal looting remains a pervasive problem in the vicinity, as related through extensive anecdotal evidence by tribal members and archaeologists with experience in the area. Therefore, although it is likely that the LVPP would be effective in protecting most resources through the intensive monitoring and broad range of tools to address the concern, it would be unlikely to be completely effective. The impact of looting of certain resources is profound, and could result in material impairment of a resources' significant or result in the exposure or disturbance of human remains. Therefore, the increased risk of looting remains significant and unavoidable (EIR, page 3-836).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves reservoir drawdown of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in an increase in the potential for looting of TCRs above levels occurring under existing conditions.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no increase in the potential for looting of TCRs as no reservoir drawdown would occur. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-7

The State Water Board finds that the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown and prior to vegetation establishment/full stabilization of sediment deposits. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit.

14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that immediately following reservoir drawdown, high-intensity and/or long-duration precipitation events could occur that would result in surface erosion of remaining reservoir sediment deposits and cause exposure of or disturbance to TCRs located within the reservoir footprints. Within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs, which is the focus of this analysis for Potential Impact 3.12-7, numerous TCR sites have been identified (Confidential Appendices P and Q). Additionally, there may be many as-yet unknown TCRs located within the footprints of Copco No. 1, Copco No. 2, and Iron Gate reservoirs (EIR, page 3-836).

The risk of continued erosion and subsequent exposure of or disturbance to TCRs located in the reservoir footprints, particularly for those associated with relatively shallow (e.g., less than 2 feet deep) sediment deposits (Confidential Appendices P and Q), would decrease within weeks to months following reservoir drawdown as revegetation stabilizes the remaining sediments. Monitoring and targeted revegetation activities included in the proposed Reservoir Area Management Plan (Volume II Appendix B: Definite Plan – Appendix H) would reduce the risk of impacts to TCRs located in areas of large crack or gully formation. As the system returns to riverine conditions within the reservoir footprints, with revegetated terraces along the river and sides of the former reservoirs, long-term erosion and sediment transport rates would return to natural rates for this portion of the watershed (USBR 2012c) (EIR, pages 3-837 – 3-838).

Implementation of Mitigation Measures TCR-1 (TCRMP), TCR-2 (LVPP), and TCR-3 (IDP) (discussed above) would reduce these impacts but overall they would remain significant and unavoidable for the reasons described above under potential Impact 3.12-2 for erosion related to reservoir drawdown (EIR, page 3-838).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in reservoir drawdown and could still result in impacts to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no reservoir drawdown and, therefore, no impacts to known or unknown Tribal Cultural Resources associated with short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources

compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-8 (prior to land transfer)

The State Water Board finds that the Proposed Project would result in a significant long-term (post-removal) impact to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

As indicated above under Potential Impact 3.12-2, despite the protection offered from the remaining sediment deposits, the vulnerability of existing TCRs to long-term exposure due to natural rates of erosion and sediment transport for the watershed after reservoir drawdown would still increase as compared to existing conditions where the reservoir waters offer almost complete protection from access and looting (with the exception of resources located within the reservoir fluctuation zone). The potential impact of this increased potential is underscored by significant anecdotal evidence of an extensive looting problem in the area, and by tribal members' testimony regarding the deep impact of past and ongoing looting, particularly in light of a history of repeated dispossession in the area (EIR, page 3-839).

Implementation of Mitigation Measure TCR-1 (TRMP), TCR-2 (LVPP), and TCR-3 (IDP), as described above, would reduce long-term impacts to TCRs from increased looting opportunities and surface and subsurface erosion; however, these impacts would remain significant (EIR, page 3-839).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in significant long-term (post-removal) impacts to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no long-term impacts to Tribal Cultural Resources as a result of reservoir drawdown as dam removal would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-8 (after land transfer)

The State Water Board finds that the Proposed Project would result in a significant long-term (post-removal) impacts to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, after land transfer, but that changes or alterations have been required in, or incorporated into, the project which will reduce the potential impact to less than significant. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that Increased access to TCRs due to land transfer has the potential to lead to looting above levels occurring under existing conditions or to land uses that result in material alteration of TCRs in a way that would undermine their current or historical tribal significance. The process for determining future land use under the KHSA Section 7.6.4 has the potential to offer TCRs appropriate protection through a variety of land use strategies. Implementation of mitigation measures TCR-6 (Land Transfer), TCR-7 (Land Easement and Transfer Stipulations), and TCR-8 (Off-site Land Transfer) have the potential to reduce the impact of future land use decisions to less than significant. These measures are in alignment with the general proposed measures for consideration to mitigate impacts to TCRs described in Public Resources Code section 21084.3, subdivision (b)(3). However, the ultimate feasibility of these measures is uncertain, and the State Water Board lacks the authority to impose them through its Clean Water Act section 401 certification. Although the EIR discloses them because it is likely that the protections would be viable for at least some portion of the identified lands, and because they represent a potentially feasible path to protect TCRs (EIR, pages 3-840 – 3-841).

Mitigation Measure TCR-6 – Land Transfer

The State Water Board has determined, and KRRC has acknowledged, that transfer of some Parcel B lands to an entity representative of Affected Tribes which are traditionally and culturally affiliated with TCRs on such lands, could foster tribal cultural and conservation practices and promote tribal identity; and further, that such transfer could be an appropriate measure to address past disturbance of TCRs caused during construction of Iron Gate Dam, Copco No. 1 Dam, and Copco No. 2 Dam, and to mitigate the impacts to TCRs caused by Project implementation.

Pursuant to KHSA Section 7.6.4, the California Natural Resources Agency (CNRA) and CDFW have begun the process to determine the disposition of Project-related (or “Parcel B”) lands, totaling approximately 8,000 acres, for public interest purposes. In California, that process is anticipated to involve the following steps: (1) inspections and preliminary due diligence regarding the condition of the Parcel B lands; (2) consultation with KHSA parties and other stakeholders regarding disposition; (3) for each parcel, a proposal by CNRA and CDFW regarding proposed transferee and other terms; (4) actual transfer of Parcel B lands from PacifiCorp to KRRC, upon KRRC’s notice that it

has secured all necessary permits for dam removal; and (5) subsequent transfer from KRRC to California or the third-party transferee, by parcel.

Based on AB 52 consultation, the State Water Board has identified the following potential mitigation measure, which is dependent on the outcome of the process required by KHSA Section 7.6.4. The Shasta Indian Nation has proposed the transfer of selected Parcel B lands (as identified in Confidential Appendix Q they have identified as possessing the most significant tribal cultural value to the Shasta Indian Nation and also having central importance to other Shasta peoples. The Shasta Indian Nation has proposed transfer to an entity, such as the Kikaceki Land Conservancy, that includes representation of the several bands of Shasta peoples. While it is too early in the process to determine the feasibility of such transfer, this measure is included for analysis in the Environmental Impact Report. In the process required by KHSA Section 7.6.4, the KRRC shall support consideration of transfers of selected lands to an entity representative of Affected Tribes that are traditionally and culturally affiliated with the TCRs on such lands, in circumstances where the lands have resources of critical tribal importance and such transfer would be a cost-effective approach to protect such resources (EIR, pages 3-841 – 3-842).

Mitigation Measure TCR-7 – Proposal for Land Easement and Transfer Stipulations

The CNRA and CDFW have begun initial discussions in a stakeholder process for determining land disposition as described in KHSA Section 7.6.4, including discussions with Shasta people.

1. For TCRs and such sites that are protected under Public Resources Code 5097.993, land easement and transfer stipulations could ensure that protection measures described in the TCRMP encumber the title for all subsequent owners for other lands not returned to the Shasta people. Any such land easement or transfer stipulations shall be consistent with KHSA Section 7.6.4 and other applicable terms.
2. There is also the potential to coincide public wildlife conservation management areas with lands that contain tribal cultural values to restrict public access where feasible and promote protection of cultural sites.
3. These mechanisms can also provide the opportunity for Shasta people to access TCRs through creation of tribal conservation easements (EIR, page 3-842).

Mitigation Measure TCR-8 – Off-site Land Transfer

At any time prior to completing the TCRMP, the KRRC may identify parcels of land not subject to the process under KHSA Section 7.6.4, that may be appropriate for transfer to an entity representative of Affected Tribes (such as the Kikaceki Land Conservancy), as off-site mitigation for Project-related impacts to TCRs. Any such transfer involving

the KRRC is subject to funding availability consistent with the terms (including funding authorities) of the KHSAs (EIR, page 3-842).

Potential Impact 3.12-11

The State Water Board finds that the Proposed Project would result in a significant impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole. The State Water Board finds that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the Proposed Project would include removal of large-scale contributing elements of the Klamath River Hydroelectric Project District, an historical resource recommended eligible for listing to the California Register of Historical Resources for the role in early development of electricity and economy of the southern Oregon and northern California regions (Cardno Entrix 2012; Kramer 2003a,b) (EIR, page 3-846). Please refer to Volume Tables 4.3-1, 4.3-3, and 4.3-5 for National Register eligibility recommendations for each of the features making up the Lower Klamath Project.

Under the Proposed Project, J.C. Boyle Dam, Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, and many of the associated hydroelectric facilities would be removed. (See Section 2 Proposed Project.) Proposed Project activities would directly impact the historical significance of the dam structures and hydroelectric facilities and other associated properties. Removal of the three California dams (the major contributors of significance), would preclude the ability for the district to remain eligible for listing with the California Register of Historical Resources. Thus, facilities removal would be a significant impact on the resource (EIR, pages 3-846 – 3-847).

The Proposed Project includes a Cultural Resources Plan (Volume II Appendix B: Definite Plan – Appendix L) that considers potential impacts to historic built environment resources, including the Klamath River Hydroelectric Project District. However, elements of the Cultural Resources Plan are not final. While the KRRC has initiated a process through the Cultural Resources Working Group and FERC to develop a Historic Properties Management Plan and a Programmatic Agreement that will be finalized and implemented, at this time the Historic Properties Management Plan and the Programmatic Agreement are not finalized and the State Water Board cannot require their implementation (EIR, page 3-847).

Even with the inclusion of documentation measures in conformance with the Secretary of the Interior's guidance, the impact to the resource and its context would be significant and the historic resource would be materially impaired. Thus, the impact to the Klamath Hydroelectric Historical District under the Proposed Project would be significant and unavoidable even with inclusion of the KRRC's proposed mitigation measure (EIR, pages 3-847 – 3-848).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves dam removal or construction at the dam complexes (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to the Klamath Hydroelectric Historical District as the Proposed Project, though at a reduced scale. Even though there would be less construction impact under some of the other alternatives as compared to the Proposed Project, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no impacts to the Klamath Hydroelectric Historical District would occur. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.12-12

The State Water Board finds that the Proposed Project would result in a significant impact associated with pre-dam-removal activities that involve disturbance of the landscape, including construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and improvements that could result in potential exposure of or damage to historic-period archaeological resources (identified in Volume I Table 3.12-1) through ground-disturbing construction and disposal activity and increased access to sensitive areas. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that historic-period cultural resources are known to be present within Area of Analysis Subarea 1 (Volume I Figure 3.12 2) and are identified in Volume I Table 3.12-1. Pre-dam removal activities involving ground disturbance, construction or improvement of associated roads, bridges, water supply lines, staging areas, disposal sites, hatchery modifications, recreation site removal and/or development, and culvert construction and/or improvements would occur within the Area of Analysis Subarea 1 (EIR, page 3-848).

Due to the nature of ground-disturbing activities and a general increase in the level of activity (e.g., construction, surveys) within the Area of Analysis Subarea 1, pre-dam removal activities that would involve ground disturbance have the potential to result in the following impacts to historic-period cultural resources through physical demolition,

destruction, relocation, or alteration of the resource or its immediate surroundings; and/or exposure or substantial movement of the resources leading to increased illicit looting resulting in a significant impact (EIR, page 3-848).

To reduce impacts to historic-period cultural resources associated with pre-dam removal activities, the KRRC is developing a Historic Properties Management Plan to identify historic properties (including historical resources as defined in Cal. Code Regs., tit. 14, § 15064.5) and include measures to implement before and during drawdown and dam removal activities to protect significant historic, historical, cultural, and tribal resources during Proposed Project implementation. The Historic Properties Management Plan will be submitted to FERC for approval before the commencement of any ground disturbing activities (including reservoir drawdown).

Additionally, the KRRC has committed to implement a Looting and Vandalism Prevention Program (LVPP) to reduce looting and vandalism to TCRs and historic-period cultural resources (Mitigation Measure TCR-2 discussed above), and an Inadvertent Discovery Plan (IDP) that would include actions to implement in the event an inadvertent discovery (e.g., human remains) (Mitigation Measure TCR-3 discussed above), both of which would provide for compliance with applicable laws regarding cultural resources and human burials. While the State Water Board anticipates that implementation of the Historic Properties Management Plan and the Programmatic Agreement, including any modifications developed through the FERC process that provide the same or better level of protection for historic-period cultural resources, would reduce impacts to less than significant, because the State Water Board cannot ensure implementation of the Historic Properties Management Plan and the Programmatic Agreement, it finds the impact as significant and unavoidable (EIR, pages 3-848 – 3-849).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves pre-dam removal activities of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts as a result of potential exposure of or damage to historic-period archaeological resources.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no pre-dam removal activities. Therefore, there would be no impact to historic-period archaeological resources associated with these activities. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-13

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period archaeological resources due to an increased potential for

damage and looting associated with shifting, erosion, or exposure from drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that since construction of Lower Klamath Project reservoirs, fine sediments have accumulated on the reservoir bottoms covering the original topography and potentially historic-period cultural resources that were present prior to reservoir construction. Because the accumulated sediments are primarily fine material, they will be easily eroded and flushed out of the reservoirs into the Klamath River during reservoir drawdown. The degree of sediment erosion will vary, with the majority of the erosion focused in the former river channel that is currently submerged in Copco No. 1, Copco No. 2, and Iron Gate reservoirs (Volume I Figures 2.7-5 and 2.7-6). The Proposed Project also includes barge-mounted pressure spraying during reservoir drawdown that would target six locations in Copco No. 1 Reservoir and three locations in Iron Gate Reservoir (EIR, page 3-849).

Due to the nature of ground-disturbing activities during drawdown within the Area of Analysis Subarea 1 that have the potential to result in physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings; and/or exposure or substantial movement of the resources leading to increased illicit looting, the impact of drawdown to historic-period cultural resources would result in a significant impact. However, as discussed in Potential Impact 3.12-2, implementation of the Historic Properties Management Plan, Mitigation Measure TCR-2 (LVPP), and Mitigation Measure TCR-3 (IDP) would reduce significant drawdown impacts considerably, and, for many resources is expected to avoid impacts completely through the design and implementation of construction plans or on-the-ground modifications to Proposed Project implementation. For impacts that it is not feasible to completely avoid, the impacts may be reduced to a less than significant level with implementation of the Historic Properties Management Plan, Mitigation Measure TCR-2 (LVPP), and Mitigation Measure TCR-3 (IDP). However, because the State Water Board cannot ensure implementation of the Historic Properties Management Plan and the Programmatic Agreement, it finds the impact as significant and unavoidable (EIR, page 3-851).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves reservoir drawdown of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would still result in impacts to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from drawdown.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no reservoir drawdown. Therefore, there would be no impact to historic-period archaeological resources due to shifting, erosion, or exposure from drawdown. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-14 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek due to short-term erosion or flood disturbance from reservoir drawdown. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1). However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that hydrologic and hydraulic modeling of floodplain inundation shows that removal of the Lower Klamath Project dams could result in minor alterations to the FEMA 100-year floodplain inundation area downstream of Iron Gate Dam, along the 18-river mile stretch of the Middle Klamath River between RM 193 and 174 (i.e., from Iron Gate Dam to Humbug Creek) (USBR 2012c). Changes in the extent of the floodplain inundation area could affect potential historic-period cultural resources currently located within the FEMA 100-year floodplain (P-47-00522 [Empire Quartz Mine], P-47-00536 [Klamathon Townsite and Limber Mill], P-47-003937 [Rock Wall], P-47-004212 [Bridge], and P-47-004427 [artifact scatters]) which could result in a significant impact to historic-period cultural resources (EIR, page 3-852).

As discussed in Potential Impact 3.12-11 above, the KRRC is developing a Historic Properties Management Plan and an IDP to identify historic properties and include measures to implement before and during drawdown and dam removal activities to protect historic, cultural, and tribal resources. Implementation of the Historic Properties Management Plan and Mitigation Measure TCR-3 (IDP) (as discussed above) may reduce impacts to resources identified in the 18-river mile stretch below Iron Gate Dam but given their proximity to Iron Gate Dam and their future inclusion in the altered 100-year floodplain following completion of the Proposed Project, impacts would remain significant and unavoidable (EIR, page 3-852).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) could still result in impacts to potential historic-period cultural resources currently located within the FEMA 100-year floodplain.

Under the Continued Operations with Fish Passage and No Project alternatives, there would be no changes to the FEMA 100-year floodplain. Therefore, there would be no impacts to potential historic-period cultural resources currently located within the FEMA 100-year floodplain. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.12-15

The State Water Board finds that the Proposed Project would result in a significant impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that blasting and other dam removal techniques could cause significant adverse impacts to historic-period cultural resources located in the immediate vicinity of Iron Gate, Copco No.1 and Copco No. 2 dams (as described in Potential Impact 3.12-4 above). The direct physical disturbance associated with blasting and other removal techniques could significantly impact historic-period archaeological resources that directly overlap with the blasting locations. For historic-period cultural resources that may be present in the immediate vicinity, impacts to these resources associated with dam removal would be significant and unavoidable (EIR, pages 3-852 – 3-853).

As discussed in Potential Impact 3.12-11, the KRRC is developing a Historic Properties Management Plan and an IDP to identify historic properties and include measures to implement before and during drawdown and dam removal activities to protect historic, cultural, and tribal resources. Implementation of the Historic Properties Management Plan and Mitigation Measure TCR-3 (IDP) (discussed above) may reduce impacts to resources in the immediate vicinity of Iron Gate, Copco No. 1, and Copco No. 2 dams, but given construction activities and their potential for impacts to potential historic-period cultural resources, impacts would remain significant and unavoidable (EIR, page 3-853).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts to historic-period cultural resources, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, historic-

period cultural resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no construction-related impacts historic-period cultural resources. Therefore, there would be no impact. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Potential Impact 3.12-16

The State Water Board finds that the Proposed Project would result in significant impacts to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction, and ongoing road and recreation site maintenance. Changes or alterations have been required in, or incorporated into, the Proposed Project which avoid or substantially lessen the significant environmental effect. (Cal. Code Regs., tit. 14, § 15091(a)(1).) However, the State Water Board further finds that it is not feasible to avoid or mitigate this impact to below the threshold of significance (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the Proposed Project Reservoir Area Management Plan includes restoration activities that would occur both within the reservoir footprint and in upland areas (i.e., disposal, staging, and hydropower infrastructure demolition areas, access roads, former recreational areas) within the Area of Analysis Subarea 1 (Volume I Figure 3.12 2). Historic-period archaeological resources are known to be located within the footprints of Lower Klamath Project reservoirs (EIR, page 3-853).

Ground-disturbing activities associated with ongoing road, restoration, and recreation site maintenance within the Area of Analysis Subarea 1 (Volume I Figure 3.12 2) include grading and excavating, which may result in material impairment due to physical demolition, destruction, relocation, or alteration of historic-period cultural resources located in both upland and reservoir footprint locations resulting in a significant impact (EIR, page 3-853).

However, as discussed in Potential Impact 3.12-11, implementation of the Historic Properties Management Plan, Mitigation Measure TCR-2 (LVPP), and Mitigation Measure TCR-3 (IDP) would reduce significant post-dam removal restoration impacts considerably, and, for many resources is expected to avoid impacts completely, through the design and implementation of construction plans or on-the-ground modifications to Proposed Project implementation. For impacts that it is not feasible to completely avoid, the impacts may be reduced to a less than significant level with implementation of the Historic Properties Management Plan, Mitigation Measure TCR-2 (LVPP), and

Mitigation Measure TCR-3 (IDP). However, because the State Water Board cannot ensure implementation of the Historic Properties Management Plan and the Programmatic Agreement, it finds the impact as significant and unavoidable (EIR, pages 3-853 – 3-854).

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish Passage Alternative, No Hatchery Alternative) would have similar impacts historic-period cultural resources as a result of ground disturbances, though at a reduced scale. Even though there would be less construction activity under the other alternatives as compared to the Proposed Project, historic-period cultural resources may be present in the areas where construction activities may be performed. Additionally, these alternatives would result in significantly fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no impacts historic-period cultural resources as a result of ground disturbances as no construction would occur. However, this alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so this alternative is not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.12-1

As indicated above the Proposed Project would result in a significant impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey) resulting from improved river ecosystem function and increased habitat access; and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's

approval of the Proposed Project despite the significant and unavoidable impact to known Tribal Cultural Resources due to exposure or damage associated with ground-disturbing construction and disposal activity and increased access to sensitive areas.

Potential Impact 3.12-3 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

As indicated above the Proposed Project would result in a significant impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources Approval of the Proposed Project thus would result in a significant unavoidable impact to Tribal Cultural Resources located Middle Klamath River from Iron Gate Dam to Humbug Creek.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to Tribal Cultural Resources located in Middle Klamath River from Iron Gate Dam to Humbug Creek due to erosion or flood disturbance associated with reservoir drawdown.

Potential Impact 3.12-4

As indicated above the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources Approval of the Proposed Project thus would result in a significant unavoidable impact to known or unknown Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality

and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known or unknown Tribal Cultural Resources due to physical disturbance from blasting or other removal techniques.

Potential Impact 3.12-5

As indicated above the Proposed Project would result in a significant impact to known Tribal Cultural Resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction and ongoing road and recreation site maintenance during operation. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to known Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known Tribal Cultural Resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration and ongoing road and recreation site maintenance.

Potential Impact 3.12-6

As indicated above the Proposed Project would result in a significant impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities at Iron Gate, Copco No. 1, and Copco No. 2. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a short-term and long-term significant unavoidable impact to Tribal Cultural Resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to Tribal Cultural Resources (short-term and long-term) due to increased potential for looting during and following reservoir drawdown activities.

Potential Impact 3.12-7

As indicated above the Proposed Project would result in a significant impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion caused by high-intensity and/or duration precipitation events immediately following reservoir drawdown and prior to vegetation establishment/full stabilization of sediment deposits. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a short-term and long-term significant unavoidable impact to known or unknown Tribal Cultural Resources within the reservoir footprints.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to known or unknown Tribal Cultural Resources within the reservoir footprints due to exposure of or disturbance from short-term erosion.

Potential Impact 3.12-8 (prior to land transfer)

As indicated above the Proposed Project would result in a significant long-term (post-removal) impact to Tribal Cultural Resources as a result of dam removal from increased

looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a long-term (post-removal) significant unavoidable impact to Tribal Cultural Resources prior to land transfer.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable long-term (post-removal) impact to Tribal Cultural Resources as a result of dam removal from increased looting opportunities and from surface and subsurface erosion of Tribal Cultural Resources, prior to land transfer.

Potential Impact 3.12-11

As indicated above the Proposed Project would result in a significant impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole, which are historical resource recommended eligible for listing to the California Register of Historical Resources. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a significant unavoidable impact to Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole.

Beneficial effects of the Proposed Project to Historic and Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall benefits of the Proposed Project along with long-term Historic and Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to

Copco No. 1 Dam, Copco No. 2 Dam, and Iron Gate Dam, their associated hydroelectric facilities, and the Klamath River Hydroelectric Project District as a whole.

Potential Impact 3.12-12

As indicated above the Proposed Project would result in a significant impact to submerged historic-period archaeological sites upon reservoir drawdown and exposure providing new access opportunities for artifact collecting and unauthorized excavation. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to submerged historic-period archaeological sites.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to submerged historic-period archaeological sites upon reservoir drawdown and exposure providing new access opportunities for artifact collecting and unauthorized excavation.

Potential Impact 3.12-13

As indicated above the Proposed Project would result in a significant impact to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from drawdown of Iron Gate, Copco No. 1, and Copco No. 2 reservoirs. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period archaeological resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period archaeological resources due to an increased potential for damage and looting associated with shifting, erosion, or exposure from reservoir drawdown.

Potential Impact 3.12-14 (Middle Klamath River from Iron Gate Dam to Humbug Creek)

As indicated above the Proposed Project would result in a significant impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek due to short-term erosion or flood disturbance from reservoir drawdown. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources located at the Middle Klamath River from Iron Gate Dam to Humbug Creek.

Potential Impact 3.12-15

As indicated above the Proposed Project would result in a significant impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant unavoidable impact to historic-period cultural resources associated with removal of Iron Gate, Copco No. 1, and Copco No. 2 dams.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath

River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources due to physical disturbance from blasting or other removal techniques.

Potential Impact 3.12-16

As indicated above the Proposed Project would result in significant short-term and long-term impacts to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration during construction, and ongoing road and recreation site maintenance. As explained above, mitigation is not available to reduce this impact to below the threshold of significance for all resources. Approval of the Proposed Project thus would result in a significant short-term and long-term unavoidable impact to historic-period cultural resources.

Beneficial effects of the Proposed Project to Tribal Cultural Resources include long-term beneficial effects on the Klamath River Riverscape through increases in fish production and health from dam removal and the long-term benefits on much of the key tribal trust species (e.g., Chinook salmon, coho salmon, steelhead, and Pacific lamprey); and long-term increase in the ability of tribes to access and use the Middle and Lower Klamath River for ceremonial and other purposes due to improvements in riverine water quality and reductions in seasonal blue-green algae blooms in Copco No. 1 and Iron Gate reservoirs.

The overall environmental benefits of the Proposed Project along with long-term Tribal Cultural Resources benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to historic-period cultural resources due to physical disturbance from ground disturbance associated with reservoir restoration, recreation site removal and/or development, and disposal site restoration and ongoing road and recreation site maintenance.

Conclusions

The State Water Board recognizes that the Proposed Project will result in numerous significant and unavoidable impacts to Historical and Tribal Cultural Resources described above, as well as a benefit to the Klamath Riverscape, a Tribal Cultural Resource. The Proposed Project's environmental benefits, combined with the benefit to the Klamath Riverscape in the area of Historical and Tribal Cultural Resources, The State Water Board finds that the broad environmental benefits of the Proposed Project, , combined with the benefit to the Klamath Riverscape in the area of Historical and Tribal

Cultural Resources, outweigh these impacts, and that they are therefore acceptable. Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Paleontologic Resources

Overview

While the majority of bedrock deposits within the Area of Analysis for paleontologic resources are not fossil-bearing units, exceptions include an unnamed diatomite deposit along the shores of Copco No. 1 Reservoir and the Hornbrook Formation (USGS 1983, Elliot 1971). The Hornbrook Formation is classified with a Low Paleontologic Potential. Based on observations of the Klamath River cutbank from the Old Hornbrook Highway and along Klamathon Road, the Hornbrook Formation bedrock is not presently exposed along the north bank of the Klamath River in this region. The banks of the river in this area are well vegetated and, downstream of the end of the Old Hornbrook Highway, they are armored by materials that form the road base for U.S. Interstate 5 (EIR, page 3-870).

The Final EIR considers whether Proposed Project actions would result in the destruction of any High Potential Paleontologic Resources (as defined in Volume I Table 3.13-2) or result in substantial adverse effects on any High Potential Paleontologic Resources. As discussed in Volume I Section 3.13, the State Water Board concludes that Potential Impact 3.13-1 would not be significant.

CEQA Findings

The State Water Board finds that there would be no impact to paleontologic resources due to implementation of the Proposed Project. The EIR explains the various ways that nonrenewable paleontologic resources could be harmed, which includes excavation using heavy equipment, the fossil bearing geologic units in the Area of Analysis are exposed in regions that have exposure to river flows and could be harmed by erosion and undercutting. It is possible that river flows would be sufficiently large to erode the fossil bearing bedrock, undercutting this bedrock, leading to slope failure. If this were to happen, nonrenewable paleontologic resources could be harmed by the destruction of these outcrops through erosion and slope failure (landslides) (EIR, page 3-869).

The base level (e.g., the lowest level to that erosion can happen due to running water) of the river in the region of Hornbrook is controlled downstream by Mesozoic to Paleozoic basement rock and this base level control pre-dated the installation of any dams, including the Lower Klamath Project, on the Klamath River. The proposed drawdown rates for each of the four dams are similar in magnitude to historical flow rates and discharge statistics for these reservoirs. Flow rates downstream of the dams

are not anticipated to exceed substantially median historical rates. In other words, discharges during drawdown would be similar to, or less than, the seasonal 10-year flood rates of discharge (EIR, page 3-871).

Based on the analysis of Potential Impact 3.11-6 in Volume 1 of the EIR, there could be bank erosion and slope failures in the lower river, but the magnitude of this bank erosion will not be substantial given that the flow rates will be similar or lower than flow rates during the operation of the Lower Klamath Project dams. Thus, there is a low likelihood that changes to river discharge under the Proposed Project would lead to downcutting or erosion of the Hornbrook Formation to a greater degree than existed prior to the construction of facilities associated with the creation of the Lower Klamath Project (EIR, page 3-871).

The EIR indicates that the Hornbrook Formation is interpreted to be of Low Paleontologic Potential. Overall, given that there is a low likelihood that changes to river discharge under the Proposed Project would lead to additional downcutting or erosion of the Hornbrook Formation and the formation's Low Paleontologic Potential, there would be no impact to paleontologic resources due to implementation of the Proposed Project (EIR, page 3-872).

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on paleontologic resources and no statement of overriding consideration is needed for this resource.

Land Use and Planning

Overview

The EIR Area of Analysis for land use and planning is located within Siskiyou County. Volume I Figure 3.14-3 portrays the existing land uses by zoning classification within the Area of Analysis for land use and planning. Land uses within the Area of Analysis are designated by the county using the following generalized categories: Agriculture – Grazing, Forestry Resources, Open Space – Natural Resources, Rural Residential, and Commercial – Services, with many parcels currently vacant.

The Final EIR considers whether Proposed Project actions would create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The EIR evaluates construction activities, removal of the Lower Klamath Project reservoirs, as well as restoration of the reservoir areas with regard to potential impacts on land uses and applicable plans and policies. As discussed in Volume I Section 3.14, the State Water Board concludes that Potential Impacts 3.14-1 and 3.14-2 would not be

significant. The Proposed Project would be beneficial to the long-term scenic quality, recreational quality, fisheries, and wildlife of the California Klamath River wild and scenic river segment, and it would be beneficial to the long-term resource values of the eligible and suitable wild and scenic river segment.

CEQA Findings

The State Water Board finds that the Proposed Project would not create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The EIR explains that during construction, the Proposed Project would install cattle exclusion fencing around the reservoir restoration areas where they abut grazing land and where the existing topography does not already provide a barrier to cattle access (e.g., steep rocky terrain, residential areas, managed forests). The cattle exclusion fencing would be installed to protect revegetation efforts and to replace the function of the reservoirs as natural barriers to cattle movement. The exclusion fencing would be placed in accordance with applicable Federal, State, and county regulations and guidance (Volume II Appendix B: Definite Plan – Section 6.1.1). The proposed fencing would not physically divide an existing ranching community since it would be placed in locations where the reservoirs currently serve as a physical barrier to keep livestock on their designated lands and thus there would be no impact on connectivity relative to existing conditions (EIR, pages 3-882 – 3-883).

No roadways are proposed to be removed as part of the Proposed Project and although boating transport between reservoir shorelines would no longer be possible once the reservoirs are removed, there would be no change to road access as a result of reservoir removal. Since boating between reservoir shorelines as a means of travel is not the only available option for the community, reservoir removal would not create a physical barrier to travel for the community and there would not be a significant impact to connectivity due to the Proposed Project (EIR, page 3-883).

During construction activities, short-term, construction-related traffic could result in physical barriers to residents and local ranchers if road access were to be discontinued or substantially interrupted within the Area of Analysis. However, implementation of the proposed Traffic Management Plan (EIR Volume 1 Appendix B: Definite Plan – Appendix O2) would avoid the creation of a physical barrier to the community through construction strategies, such as scheduling, detour plans, signage and traffic control such that the potential impact would be less than significant (EIR, page 3-883).

After completion of the Proposed Project, roads owned or managed by PacifiCorp, which are primarily located on the south side of the California Lower Klamath Project reservoirs and were constructed for dam facility maintenance, may no longer be needed. While portions of these roads may currently be utilized by local residents, there are alternative access routes that connect to county roads, and so even if these

roads are not maintained in the future, there would be no long-term physical barrier to road access under the Proposed Project and the impact would not be significant (EIR, page 3-883).

There are a number of public agencies owning or regulating land use within the Area of Analysis for land use and planning.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would not create physical barriers that substantially change the connectivity between areas of a community or cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, no statement of overriding consideration is needed for this resource. In addition, the Proposed Project would be beneficial to the long-term scenic quality, recreational quality, fisheries, and wildlife of the California Klamath River wild and scenic river segment, and it would be beneficial to the long-term resource values of the eligible and suitable wild and scenic river segment.

Agriculture and Forestry Resources

Overview

Most of the land in the Area of Analysis is classified by the Department of Conservation (DOC) as Grazing Land, with a small area of Unique Farmland located approximately two miles south of Copco No. 1 Reservoir (Volume I Figure 3.15-1). There are no lands that are zoned Forest Resources under the Siskiyou County General Plan within the agriculture and forestry Area of Analysis (Volume I Figure 3.14-1). However, some of the lands (primarily near the upstream end of Copco No. 1 Reservoir) in the Lower Klamath Project may be managed for forest resources as a compatible use with existing Open Space zoning.

The Final EIR examines the potential effect of the Proposed Project on areas used or zoned for farmland or forest lands and the potential for conversion of the farmland or forest land to non-agricultural or non-forest use, respectively. Within the Area of Analysis, the EIR focuses on existing road systems to facilitate dam decommissioning and removal and disposal sites, since the river system itself is not used or zoned for farmland or forest land. As discussed in Volume I Section 3.15, the State Water Board concludes that Potential Impacts 3.15-1, 3.15-2, 3.15-3, and 3.15-4 would not be significant. Beneficial effects of the Proposed Project could include an increase in agricultural opportunities on currently inundated lands from reservoir drawdown; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). Additionally, the Parcel B lands could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine

restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898).

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on agricultural or forestry resources. The use existing road systems to facilitate dam decommissioning and removal would need to be upgrade to allow for the heavy traffic expected during deconstruction. However, the existing roads and disposal sites for the dams are not currently used or designated for agriculture use. The EIR explains that these roads and disposal sites are existing and/or on lands not designated for agriculture, their use for disposal would not directly convert Farmland to non-agricultural use. There can be no conflict with Williamson Act land because there are no contract parcels within the agriculture and forestry Area of Analysis. The EIR concludes that the Proposed Project would not result in the conversion of farmland within the Area of Analysis for agriculture and forestry resources to non-agricultural uses, and it would not conflict with existing zoning or Williamson Act contracts. Reservoir drawdown may increase agricultural opportunities on currently inundated lands; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). The Parcel B lands could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898).

There are no lands zoned for forest resources within the Area of Analysis, from the eastern end of Copco No. 1 Reservoir downstream to Iron Gate Dam (EIR Volume 1 Figure 3.14-1). The EIR explains that the roads and disposal sites, used to facilitate dam decommissioning and removal, are existing and/or on lands not designated for forestry, their use for disposal would not directly convert forest lands to non-forest use. Thus, there would be no changes in land use under the Proposed Project that would conflict with current forest use or zoning. There is the potential for an increase in forest land due to revegetation of previously inundated lands with woody species, however the full extent to which lands would reseed with forest species is unknown (EIR, pages 3-898 – 3-899). Implementation of the Proposed Project would not affect the forest lands or forest uses surrounding Copco No. 1, Copco No. 2, or Iron Gate reservoirs or in the larger agriculture and forestry Area of Analysis.

As indicated above, the roads and disposal sites, used to facilitate dam decommissioning and removal, are existing and/or on lands not used/designated as farmland or forest land (EIR, page 3-899). Therefore, the EIR concludes that the Proposed Project would not indirectly convert farmland to non-agricultural use or forest land to non-forest use.

The EIR explains that the Proposed Project would not involve other changes in the existing environment that could result in the conversion of Farmland to non-agricultural

use or conversion of forest land to non-forest use. Irrigated farmlands classified as Prime or of Statewide Importance, located primarily at the farthest eastern extent of Copco No. 1 Reservoir and farther upstream along the Klamath River (Volume I Figure 3.15-2), are flood-irrigated from direct diversions that are either located on the free-flowing reach of the Klamath River upstream of the Project or along tributaries. The headworks of these diversions would still be operational following the removal of the dams since they are situated on the natural channels of the river and tributaries and do not divert from the Lower Klamath Project reservoirs. Impacts on agricultural crops (primarily hay production) are not expected since the irrigation season occurs after the scheduled drawdown period (November to March; see also EIR Volume 1 Table 2.7-1) and these fields are not reliant on the reservoirs for their water supply. There is a possibility that agricultural diversion headworks downstream of each dam would experience siltation or otherwise be affected during reservoir drawdown (EIR Volume 1 page 3-899). However, the Proposed Project includes measures to address these temporary supply issues (see Potential Impact 3.8-3).

In the Lower Klamath Basin, some agricultural diversion of water occurs for farming and ranching from tributaries such as the Shasta, Scott, Salmon, and Trinity rivers. However, the Lower Klamath Project is located on the mainstem Klamath River. Therefore, these diversions of water from tributaries would not be affected by removal of the Lower Klamath Project dams (EIR, pages 3-899 – 3-900).

Disposal of Iron Gate Dam demolition debris would be placed on a 36-acre plot of Parcel B land approximately one mile south of the dam. This area is currently zoned as Open Space – Natural Resources under the Siskiyou County General Plan, but is open, non-irrigated grassland that is used for grazing. Although the site would be cleared of vegetation and topsoil in preparation for debris disposal, which would temporarily halt any grazing activity, the site would be regraded, capped with topsoil, and seeded once disposal is complete. This would restore the area and allow for continued grazing (EIR Volume 1 page 3-900). This temporary disturbance would be a less than significant impact in light of the availability of other lands for grazing and the small area involved.

Scoping comments expressed the concern that reservoir removal could affect local groundwater wells. However, based on available information, Farmland within the Area of Analysis does not rely upon groundwater wells for cultivated area irrigation, instead using flood irrigation by diverting surface water from tributaries to the Klamath River. In any event, implementation of the Groundwater Well Management Plan (as described in EIR Volume 1 Section 2.6.8.6 Groundwater Wells Management and in Appendix B: Detailed Plan), including well deepening, would return the production rate of any affected groundwater supply well to conditions experienced prior to dam decommissioning. Therefore, the potential for conversion of Farmland to non-agricultural uses resulting from lowering groundwater levels as a result of the Proposed Project would be less than significant (EIR, page 3-900).

The land within the agriculture and forestry Area of Analysis is not zoned forest land, does not contain commercial forest land, and is not used for forestry purposes. However, the Lower Klamath Project would allow previously inundated lands to revegetate and potentially increase the amount of forest cover within the Area of Analysis, which would be beneficial for forest land. Therefore, the Lower Klamath Project would not result in conversion of forest land to non-forest use in the short term or long term (EIR, pages 3-900 – 3-901).

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on agriculture or forestry resources and no statement of overriding consideration is needed for these resources. In addition, beneficial effects of the Proposed Project could include increased agricultural opportunities on currently inundated lands from reservoir drawdown; however, due to uncertainties in the ultimate land use of the inundated reservoir lands, this is speculative (see also Volume I Section 2.7.11 Land Disposition and Transfer). Another beneficial effect would be the disposition of Parcel B lands, which could ultimately be managed for wide potential range of public interest uses, including but not limited to open space, active wetland and riverine restoration, river-based recreation, grazing, and potentially other uses (EIR, page 3-898).

Population and Housing

Overview

The Proposed Project would not directly cause the elimination of existing housing (except for removing existing PacifiCorp housing, which is no longer needed). The Proposed Project would also not create a long-term increase in housing needs or induce long-term population growth. The EIR's analysis of potential effects of the Proposed Project, therefore, focuses on the temporary worker population required for construction activities and their potential need for housing within the Area of Analysis. The peak need for worker housing would occur over an approximate two-year construction period, with a lesser need for housing during preparation and follow-up restoration/monitoring activities. As discussed in detail in EIR Section 3.16 Population and Housing, the State Water Board concludes that Potential Impacts 3.16-1 and 3.16-2 would not be significant.

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on population or housing. The Proposed Project would not directly induce substantial population growth, as it does not require the construction of new homes or the demolition of existing homes (except for a small number of residences owned by PacifiCorp and used by workers maintaining the dams) (see also EIR Volume I Potential

Impact 3.16-2). Of primary concern is temporary worker population required for construction activities and their potential need for housing within the Area of Analysis (see EIR Volume I, Table 2.7-13). The EIR explains that proposed construction activities would require an average of 105 workers and a peak of 175 workers during the anticipated four-month peak period when work on three dams would occur at the same time. EIR Volume I, Table 3.16-1 indicates that the City of Yreka has 317 vacant units and the County, as a whole, has 4,989 vacant units, some of which may be close enough to the Proposed Project to provide an ample supply for the short-term influx of workers. It is also likely that many from the local construction workforce would already live in the county and would not need short-term housing. Accordingly, the Proposed Project would not result in a substantial influx of population and there would be a less than significant impact on population growth in the Area of Analysis.

The EIR explains that existing housing currently owned and maintained by PacifiCorp would be removed as part of the Proposed Project, but this would no longer be needed to maintain the dam facilities (EIR Volume II Appendix B: Definite Plan). The potential effects of the Proposed Project on housing are limited to the need for an additional temporary worker population during construction activities and their potential need for housing. As existing vacancy rates (see EIR Volume I Table 3.16-1) are relatively high, and there are an ample number of construction workers that currently reside within the county, there would not be a need to displace existing residents due to construction activities. The loss of the residences PacifiCorp currently owns would not create a need to build replacement housing elsewhere. As a result, there would be no significant impact.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on population or housing and no statement of overriding consideration is needed for these resources.

Public Services

Overview

Evaluation of the Proposed Project's impacts on Public Resources focused on potential impacts related to maintaining acceptable service ratios, response times, or other performance objectives for any of the public services during the construction-related activities. The use of the rural roads for construction activities could interfere with emergency response and evacuation. In addition, demolition of the dams associated with the Proposed Project would result in elimination of a long-term water source for wildfire services (e.g., the reservoirs).

The Final EIR examines the potential effect of the Proposed Project on public services, including fire protection, police protection, schools, and parks, among others. As

discussed in EIR Section 3.17, the State Water Board concludes that the potential effects of the Proposed Project on school services and facilities (Potential Impact 3.17-3) would not be significant. A potential beneficial effect of the Proposed Project includes long-term effects associated with the reduction in hydropower operation activity and existing recreation, which could reduce the risk and need for emergency services, as a result of reduced traffic from those uses.

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

CEQA Findings

Potential Impact 3.17-1 (short term)

The State Water Board finds that increases in public service response times would be a significant impact for emergency fire, police, and medical services due to construction and demolition activities, including construction-related traffic, but that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. (Cal. Code Regs., tit. 14, § 15091(a)(1).)

The EIR explains that the Proposed Project could result in a significant impact if it results in substantial increases in emergency response times within the Area of Analysis. In general, development of an adequate Traffic Management Plan would mitigate the potential short-term impacts of construction-related traffic and therefore minimize changes to public service response time. Due to the rural nature and low concentration of roads in the area, most existing roads are currently used, and would continue to be used, by emergency responders and for evacuation routes in the event of fire or other emergencies. The use of these roads for construction activities could interfere with emergency response and evacuation.

Section 3.21 Hazards and Hazardous Materials discusses the transport of hazardous materials, emergency, and wildfire potential and includes Mitigation Measure HZ-1 to address potential impacts to emergency response under the Proposed Project. As discussed in Section 3.22 Traffic and Transportation, the Proposed Project also includes an Emergency Response Plan. Mitigation Measure TR-1 includes coordination between the Traffic Management Plan and Emergency Response Plan and additional detail necessary to reduce impacts.

Potential Impact 3.17-2

The State Water Board finds that a substantial increase in response times would also be a significant impact for suppressing wildland fires where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source. The State Water Board finds that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that under the Proposed Project, removal of the Copco No.1, Copco No. 2, and Iron Gate reservoirs would also remove a long-term water source for fire suppression crews. While the initial response times for existing aircraft using fire retardant would not be changed by removal of the reservoirs, the turn-around time for helicopters or ground crews refilling with water for fire abatement purposes could be increased under the Proposed Project relative to existing conditions. Travel time involved in accessing water in newly formed pools in the Klamath River (both the current channel and the channel reaches to be exposed in the current reservoirs following drawdown) would be greater than that for the existing Lower Klamath Project reservoirs because retrieval of water from relatively smaller, more narrow, river pools is more difficult than dipping directly from the broad water surface of a lake or reservoir, and only one helicopter at a time would have access to a given river pool versus multiple helicopters that can draw at one time from a large reservoir (EIR, page 3-916).

Thus, although retrieving water directly from the Klamath River is consistent with how wildfires are suppressed along the Klamath River downstream of Iron Gate Dam under existing conditions, overall response and travel times between water fills for helicopter crews would be expected to increase with the loss of the reservoirs compared with existing conditions. Any amount of additional response time compared with existing conditions could result in a substantial increased risk of loss, injury, or death involving wildland fires and this would be a significant impact. To compensate for the loss of reservoir water supply, the Proposed Project includes providing alternate water supply through dry hydrants that would be accessible to ground crews following removal of the dams. Flows in the Klamath River and tributaries are not expected to substantially change post-dam removal, as compared to current flows, and firefighting ground crews could still use the river as a water supply as long as physical access to water is provided (EIR, page 3-916). While the proposed dry hydrants would provide a source of water to ground crews for firefighting, they do not offer the same degree of access as helicopter use of the reservoirs for wildfires occurring in the vicinity of the Lower Klamath Project, for which the reservoirs are the closest and safest source of water for aerial crews (EIR, page 3-918). Other options that would assist in mitigating this impact would be to include appropriately placed dip ponds within the Proposed Project's restoration areas or direct withdrawal from the river using a boat ramp, pumping stations equipped with pumps connected to wells or deep pools in the river, above-ground storage tanks with ready access for transferring water to pumper trucks.

KRRC's most recent application for water quality certification of the Proposed Project, as submitted to the State Water Board in December 2019 (KRRC 2019x), includes the following additional information about the Fire Management Plan:

- "KRRC intends to avoid a material net increase of fire risk as compared to baseline conditions in the Project area as defined in the Definite Plan."
- "KRRC is developing an updated Fire Management Plan that will include effective and feasible strategies and concepts to enhance both short-term and

long-term fire prevention, detection, and suppression in the Klamath River Basin, and will submit the updated Fire Management Plan with FERC in support of the pending surrender application.”

- “The updated Fire Management Plan is being developed in consultation with federal, California, Oregon, and local fire agencies. During construction, these measures include, but are not limited to meeting or exceeding federal, Oregon, and California requirements for fire prevention and suppression during construction activities, implementation of best management practices following National Fire Protection Association standards, and the designation of a safety officer on site that is responsible for overseeing fire responsibilities for construction operations 24 hours a day, seven days a week. The Fire Management Plan will also address long-term fire management to ensure that the Klamath River Basin’s fire-fighting resources are not diminished due to the implementation of the Project, including the potential deployment of technology that will rapidly detect wildfire ignitions in the Basin allowing fire agencies to respond quickly to fire ignitions. KRRC is also consulting with fire agencies on identifying replacement water sources and access, including identification of aerial river access points.”
- “In addition, KRRC has also contracted with Reax, a leading fire engineering firm that has assisted utilities throughout California (including PacifiCorp) to reduce operational fire risk. Reax will assist KRRC with the development of the updated Fire Management Plan to ensure that the measures set forth in the updated Fire Management Plan will effectively reduce short- and long-term fire risk as a result of the implementation of the Project”.

In their comment letter on the Draft EIR dated February 25, 2019 (please refer to EIR Volume III comment SA4-1), CALFIRE notes “...*It is fair to say the possible impacts of the dam removal on firefighting would depend on a variety of factors including: Location of fire, type of fire, fire behavior, firefighting resources assigned to the fire, time of year when the fire occurs, the water flow of the Klamath River on the day of the fire, etc.... Ultimately the impact of the dam removals will have to be evaluated on a case by case basis. CAL FIRE is used to fighting wildland fires in a large variety of circumstances and will adapt to whatever conditions we encounter at each fire. Also CAL FIRE understands that the ... (KRRC) will be working with CAL FIRE on KRRC’s Fire Management Plan to address the analyzed issues.*”

In KRRC’s comment letter on the Draft EIR, dated February 26, 2019 (please refer to EIR Volume III comment ORG 47-3), KRRC states “*As a condition of license surrender, KRRC will address any potential increased response time and associated wildland fire risk due to implementation of the Proposed Project.*” KRRC further states “*KRRC continues to work with CAL FIRE to identify not only replacement sources of water, but ways in which KRRC can facilitate the reduction of overall emergency response times through communications and roadway improvements.*” KRRC goes on to describe

specific steps that they would take to implement replacement sources and reduce overall emergency response times under the Proposed Project.

Recommended Measure PS-1 recommends the KRRC and/or its Contractor(s) to develop, in consultation with the CALFIRE Siskiyou Unit, an updated Fire Management Plan that identifies long-term water sources for helicopter and ground crews (including construction and use of proposed dry hydrants, dip ponds, or other alternatives). However, where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the reservoirs would otherwise have been the nearest water source, long-term impacts to the public's risk of loss from wildfires remain significant and unavoidable. While the State Water Board appreciates KRRC's commitment to addressing any potential for increased response time and associated wildland fire risks due to implementation of the Proposed Project as a condition of license surrender, and the State Water Board also appreciates the aforementioned comment letter from CALFIRE, the EIR significance determination related to this topic remains 'significant and unavoidable' since the terms of an updated Fire Management Plan and its incorporation of Recommended Measure PS-1 are not within the State Water Board authority, and the State Water Board therefore cannot ensure implementation of Recommended Measure PS-1 or other equally protective measures. Thus, the State Water Board concludes that the long-term impact to the public's risk of loss from wildfires to be significant and unavoidable and it cannot be mitigated.

Under the Partial Removal, Three Dam Removal, and No Hatchery alternatives, elimination of the Lower Klamath Project reservoirs as a long-term water source for wildfire services and the associated increase in response times for fighting wildfires (Potential Impact 3.17-2) would result in the same impacts as described for the Proposed Project because removal of the Lower Klamath Project reservoirs would still occur to ensure a free-flowing Klamath River under all river stages and flow conditions. Under the Two Dam Removal Alternative, the remaining Copco No. 2 Reservoir has a considerably smaller surface area would potentially accommodate fewer helicopters at one time as compared with Copco No. 1 and Iron Gate reservoirs under existing conditions, which would increase response times.

Under the Continued Operations with Fish Passage and No Project alternatives, the Lower Klamath Project reservoirs would remain in place and there would be no change from the existing condition in terms of the facilities' availability to serve as a long-term water source for fighting wildfires. Therefore, there would be no impact. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.17-2

As indicated above, removal of the Copco No.1, Copco No. 2, and Iron Gate reservoirs would remove a long-term water source for fire suppression crews after the reservoirs are removed. The removal of the reservoirs could increase turn-around time for helicopters or ground crews refilling with water for fire abatement purposes. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in long-term impacts to the public's risk of loss from wildfires associated with removal of the reservoirs. As noted above, the KRRC's most recent submittal to the State Water Board put forth a path to eliminating the risk: this reduces the changes that this potential impact will occur.

The long-term environmental benefits, of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impact to the public's risk of loss from wildfires.

Conclusions

As indicated above, the Proposed Project would result in significant and unavoidable long-term impacts to the public's risk of loss from wildfires due to the removal of the reservoirs. The Proposed Project will also result in significant environmental benefits.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the short-term exceedance of NOx thresholds to be acceptable.

Utilities and Service Systems

Overview

Unlike many other projects, the Proposed Project would result in reduced long-term utility and services use due to the reduction of use from the operation of the hydropower facilities. Therefore, the majority of the impact analysis focuses on potential short-term, construction-related impacts associated with construction activities. Of primary concern for short-term impacts is the export of solid waste from construction during construction activities before, during, and after dam removal and reservoir drawdown. As discussed in detail in EIR Volume I Section 3.18, the State Water Board concludes that Potential Impacts 3.18-1, 3.18-2, 3.18-3, and 3.18-4 would not be significant.

CEQA Findings

The State Water Board finds that the Proposed Project would have no significant impacts on utilities and service systems. Of primary concern for short-term impacts is the export of solid waste from construction during construction activities before, during, and after dam removal and reservoir drawdown.

The Proposed Project includes elimination of some of the existing recreational sites, resulting in removal of the associated wastewater facilities. As part of the removal of existing systems, or for any new recreational facility proposed, each facility would need to meet applicable wastewater system design requirements. The Proposed Project would also make use of portable chemical toilet facilities during construction activities, with wastes disposed of by the toilet providers. Since the total area of construction-related activities for the Proposed Project amounts to greater than one acre, the Proposed Project would be required to obtain coverage under the State Water Board Construction General Permit (2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (CGP) (EIR, pages 3-928 to 3-929).

There is no existing formal stormwater collection system in the Area of Analysis for utilities and service systems. Each of the proposed construction areas, including staging, stockpiling, on-site disposal, and access-related areas, must be covered by the CGP. The Proposed Project would not require construction of new stormwater drainage facilities or expansion of existing facilities (EIR, page 3-929).

Overall, the total volume of waste generated by the Proposed Project would be approximately 1.4 million cubic yards (see EIR Volume I Table 2.7-3 for estimated quantities of waste disposal for Copco No. 1 Dam, Table 2.7-5 for Copco No. 2 Dam, and Table 2.7-7 for Iron Gate Dam). For the Proposed Project, the vast majority of waste (i.e., soil and concrete) generated by demolition of the Lower Klamath Project dam complexes would be disposed of onsite and would not require transport to a landfill, thereby providing a substantial diversion of wastes meeting the County's Assembly Bill (AB) 939 requirements. Waste material exported from the Proposed Project sites would be disposed of at the Yreka Transfer Station or hauled by the contractor, most likely to the Dry Creek Landfill. Disposal of approximately 700 tons of treated wood waste from the wooden staves at Copco No. 2 Dam, where the treated wood is considered a hazardous material, would most likely be transferred to Anderson Landfill in Anderson, California. Anderson Landfill is a Class I facility, lined to prevent contamination of underlying soils and groundwater, and permitted to accept hazardous waste, including treated wood waste (EIR, page 3-930)

Based on the anticipated volume of waste generation for the Proposed Project and the above identified capacities for local landfill facilities (described in EIR Volume I Section 3.18.2.4 Solid Waste), there is sufficient permitted capacity to accommodate the solid waste disposal needs of the Proposed Project, in keeping with applicable statutes and regulations related to solid waste.

Conclusions

As indicated above, the State Water Board finds that the Proposed Project would have no significant impacts on utilities and service systems and no statement of overriding consideration is needed for these resources.

Aesthetics

Overview

Removal of the Lower Klamath Project could affect aspects of scenic quality throughout the Klamath River in California, including aspects like water clarity, fish viewing opportunities, and riparian and channel characteristics of the river downstream of the dams. However, potential aesthetic effects on these aspects would decrease with distance downstream from the Lower Klamath Project as the river is affected more by tributary inputs and less by the dams and associated facilities. Therefore, the primary Area of Analysis for aesthetics is within the viewshed of the Lower Klamath Project reservoirs, which includes the proposed Limits of Work in California (i.e., Copco No. 1, Copco No. 2, and Iron Gate dams, reservoirs, and associated facilities, and the areas identified as construction/demolition areas and staging areas) plus a buffer to the ridgeline surrounding the reservoirs. The secondary Area of Analysis for aesthetics includes those areas within view of the Klamath River downstream from Iron Gate Dam to the confluence with the Shasta River (RM 179.5), as well as the portion of the Klamath River extending upstream from Copco No. 1 Reservoir to the Oregon-California border, because these river reaches may be affected by removal of the upstream dams.

The Final EIR examines the potential effect of the Proposed Project on the existing character of the landscape, views, changes to scenic elements of a landscape, visual character or quality of the site and its surroundings, and sources of substantial light or glare that would adversely affect day or nighttime views in the area. As discussed in detail in EIR Volume Section 3.19 Aesthetics, the State Water Board concludes that Potential Impacts 3.19-1, 3.19-2, 3.19-3, 3.19-4 (long-term), 3.19-5, and 3.19-6 would either not be significant or there would be a beneficial effect from the Proposed Project. Beneficial effects of the Proposed Project include long-term improvements in visual water quality from reduced algal bloom, which would be beneficial. In addition to visual water quality improvements, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects on terrestrial resources.

CEQA Findings

Potential Impact 3.19-4 (short term)

The State Water Board finds that visual changes resulting from reservoir drawdown and restoration, including temporarily bare/unvegetated banks, would be a significant environmental impact over the short term and that it is not feasible to mitigate or avoid this impact. (Cal. Code Regs., tit. 14, § 15091(a)(3).) As proposed in the Reservoir Area Management Plan (EIR Volume II Appendix B: Definite Plan – Appendix H), manual revegetation would occur quickly following reservoir drawdown while the sediment deposits are still wet. In the short term, all exposed areas would be hydroseeded. Woody vegetation would also be planted in the year immediately following drawdown. Based on monitoring results, reseeding and replanting would occur again, as needed, for the following five years. Until the restoration is complete, some areas of the reservoir footprints could appear barren and/or sparsely vegetated.

Based upon the proposed Reservoir Area Management Plan (EIR Volume II Appendix B: Definite Plan – Appendix H), the aesthetics primary Area of Analysis would be in a visible state of transition for four to five years, followed by several more years where contrast from adjacent natural woodlands, where they exist, would be evident. As discussed in Volume III Attachment 1 Section 3.19.5, *Aesthetics – Potential Impacts and Mitigation*, the exposure of previously inundated areas could result in a short-term (temporary) change in the Bureau of Land Management's (BLM) Visual Resource Management (VRM) class, from VRM Class III (level of visual change to the characteristic landscape is moderate) to VRM Class IV (level of visual change to the characteristic landscape is high), for those key observation points associated with the Lower Klamath Project facilities and located within the reservoir viewshed (C1 to C7, FC5, IG1 to IG8; see Volume III Attachment 1 Figure 3.19-2 and Table 3.19-3) because exposure of the reservoir footprints may dominate the view and be the major focus of viewer attention prior to vegetation reestablishment. This would be a significant and unavoidable impact. In areas where the VRM analysis was not conducted, the exposure of previously inundated areas would cause a substantial short-term (temporary) adverse effect on scenic vistas with views of the reservoir footprint, since the extent of the change to the existing landscape would dominate the overall public view and would be inconsistent with the existing open water reservoir views and the natural vegetation patterns above the reservoir shorelines. This also would be a significant and unavoidable impact. It is not feasible to mitigate these short-term impacts because plants and vegetation planted in exposed areas would need time to grow.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, No Hatchery Alternative) would result in significant short-term visual

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

Under the Continued Operations with Fish Passage and No Project alternatives, the impact would be avoided because the Lower Klamath Project dams would not be removed and short-term visual impacts related to reservoir drawdown would not occur. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Proposed Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.19-7

The State Water Board finds that temporary lighting erected for nighttime construction activities during dam demolition, and security lighting that might be required during deconstruction would be a significant environmental impact over the short term and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

During peak construction periods (April through November of dam removal year 2, EIR Volume III Attachment 1 Table 2.7-8), nighttime construction activities could occur regularly. The EIR explains that temporary lighting could cause glare that would adversely affect nighttime views in the area, particularly for overnight visitors and residents near the Copco No. 1 Reservoir. The impact would occur because the area is rural with very little existing night lighting, and because construction lighting would be relatively intense, the impact on nighttime views would be a significant impact that would occur temporarily, until dam deconstruction was complete.

The Proposed Project currently does not include measures that would reduce impacts to nighttime views cause by temporary construction lighting. As discussed in Volume III Attachment 1 Section 3.19.5, *Aesthetics – Potential Impacts and Mitigation*, KRRC proposes that KRRC and the appropriate state or local agency would work together to develop recommended terms and conditions that should be adopted by FERC as conditions of approval for the Lower Klamath Project. This is consistent with FERC's preference for licensees to be 'good citizens' of the communities in which projects are located and thus to comply, where possible, with state and local requirements. It would be appropriate for any such terms to include measures to reduce nighttime light and glare on surrounding residences during construction. However, overseeing development and implementation of measures to reduce impacts to nighttime views does not fall within the scope of the State Water Board's water quality certification authority, which is why impacts cannot be mitigated.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves construction would result in significant short-term impacts to nighttime views cause by temporary construction lighting (Partial Removal Alternative, Three Dam Removal Alternative, Two Dam Removal Alternative, Continued Operations with Fish

Passage Alternative, No Hatchery Alternative). The No Project Alternative would not involve construction and, therefore, would not result in construction-related lighting impacts. However, the No Project Alternative would not result in any benefits for environmental resources compared to the Proposed Project and would not meet the Project's restoration purpose and objectives, and so is not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.19-4

As indicated above, reservoir drawdown and restoration under the Proposed Project would result in short-term visual changes, including the temporarily bare/unvegetated banks. Until the restoration is complete, some areas of the reservoir footprints could appear barren and/or sparsely vegetated. Because exposure of the reservoir footprints may dominate the view and be the major focus of viewer attention prior to vegetation reestablishment, the impacts would be significant and adverse. Once vegetation has reestablished, there would no longer be a visual impact. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in short-term visual impacts associated with exposure of reservoir footprints.

The Proposed Project would have beneficial effects on views along the river. The Proposed Project would reduce the occurrence and severity of algal blooms (Potential Impact 3.4-2). The removal of the dams is expected to reduce the river's summer algae concentrations, which result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. These improvements would be more noticeable from on-river and riverside viewpoints, and much less noticeable from river canyon roadway and community viewpoints. These long-term changes in visual water quality from reduced algal bloom would be beneficial. In addition to visual water quality improvements, the Proposed Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The long-term benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable visual impact associated with reservoir drawdown.

Potential Impact 3.19-7

As indicated above, the Proposed Project area is rural with very little existing night lighting, and because construction lighting would be relatively intense, the impact on

nighttime views would be a significant impact that would occur temporarily, until dam deconstruction was complete. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in short-term impacts to nighttime views caused by temporary construction lighting.

The Proposed Project would have beneficial effects on views along the river. The Proposed Project would reduce the occurrence and severity of algal blooms, which would result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. The long-term benefits of the Proposed Project, as discussed above, support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable impact to nighttime views associated with construction or security lighting.

Conclusions

As indicated above, the Proposed Project would result in significant unavoidable impacts associated with the short-term visual changes resulting from reservoir drawdown, including temporarily bare/unvegetated banks, long-term visual changes related to new recreational facilities, and short-term impacts to nighttime views in the area from new sources of substantial light or glare from construction or security lighting.

The removal of the dams is expected to reduce the river's summer algae concentrations, which result in changes to both water clarity and coloration. Improvements in water quality, such as water clarity or fish viewing opportunities, could result in some improvement in scenic resources. These long-term changes in visual water quality from reduced algal bloom would be beneficial. This benefit is also related to the Project objective of improving the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River. In addition to visual water quality improvements, the Proposed Project would have broad environmental benefits, as it is projected to: improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Proposed Project would result in long-term beneficial effects to terrestrial resources.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the aesthetic impacts of the Proposed Project to be acceptable.

Recreation

Overview

The Proposed Project includes components, such as dam removal, that could have a significant effect on recreation but are necessary to accomplish the intended long-term water quality and fish passage improvements.

The Final EIR examines the potential effect of the Proposed Project on river- and reservoir-based recreation opportunities, activities, and settings within the Area of Analysis, short-term and long-term effects on access, flow-dependent recreational activities, recreational fishing, and other recreational activities associated with the existing Klamath River corridor and reservoir recreational facilities within the Area of Analysis. As discussed in detail in EIR Volume III Attachment 1 Section 3.20 Recreation, the State Water Board concludes that Potential Impacts 3.20-1, 3.20-2, 3.20-3, 3.20-4, 3.20-5 (Middle Klamath River between Iron Gate Dam [RM 193.1] and Humbug Creek [RM 174.3]), 3.20-6 and 3.20-7 would either not be significant or would be beneficial. Beneficial effects of the Proposed Project include an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach, potential increase in the number of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months, removal of the dams would help eliminate barriers to volitional fish passage in the Klamath River upstream of the Lower Klamath Project, which would beneficially affect recreational fishing at these upstream locations, and improved water quality conditions would result in long-term beneficial effects for water-contact-based recreational activities.

CEQA Findings

Potential Impact 3.20-5

The State Water Board finds that the Proposed Project would result in a significant impact to whitewater boating opportunities in the Hell's Corner Reach (within the upper portion of the Hydroelectric Reach) for three months during the late summer and early fall and that it is not feasible to mitigate or avoid this impact. The EIR explains that in the Hell's Corner Reach, there would be loss of acceptable flows for whitewater boating opportunities with the Proposed Project as compared to existing conditions due to the loss of hydropower operations. The minimum flow necessary for whitewater boating in this reach is estimated to be between 1,000 cfs and 1,300 cfs. Klamath River flow in the high demand months of July to September are expected to remain below 1,000 cfs under the 2013 BiOp Flows except during very wet water years (i.e., exceedance probability less than 5 percent), and under the 2019 BiOp Flows except during wet and very wet water years (i.e., exceedance probability less than 10 percent), based on an evaluation of flow exceedance curves at Keno Dam (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*).

The impact would occur within the Hydroelectric Reach because removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations, which would reduce flows acceptable for recreational whitewater boating under the Proposed Project (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*). It is not feasible to mitigate the impact because it is not feasible to increase recreational whitewater rafting flows in this reach absent J.C. Boyle Dam. However, the potential impacts would be minor overall and outweighed by other beneficial effects.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of J.C. Boyle dam (i.e., Partial Removal Alternative, No Hatchery Alternative) would result in significant impacts to whitewater boating opportunities in the Hell's Corner Reach because removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations. The Two Dam and Three Dam Removal Alternatives would not remove the J.C. Boyle Dam. However, J.C. Boyle hydroelectric peaking operations and/or recreation flows would not occur under this alternative since Copco No. 1 and Iron Gate dams would not be present to reregulate flows downstream. Therefore, the Two Dam and Three Dam Removal Alternative would also result in significant impacts whitewater boating opportunities in the Hell's Corner Reach.

Under the Continued Operations with Fish Passage Alternative, recreational flows in the Hydroelectric Reach would be limited by mandatory conditions, so the loss of whitewater boating opportunities in the Hell's Corner Reach would be similar to those described for the Proposed Project. As discussed above, this alternative would result in significantly fewer benefits for environmental resources than the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so is not environmentally superior.

Since the No Project Alternative would not involve dam removals, it would not eliminate the hydropower peaking operations, which would reduce flows acceptable for recreational whitewater boating under the Proposed Project. However, this alternative would result in continuation of some of the stresses that currently affect Chinook salmon populations. The presence of dams and reservoirs under the No Project Alternative would continue to cause seasonally poor water quality, and high late summer and early fall water temperatures, allowing some conditions favorable for the transmission of fish disease to persist. The No Project Alternative would result in fewer benefits for environmental resources compared to the Proposed Project and would not meet the Project's restoration purpose and objectives, and so is not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.20-5

As indicated above, removal of the J.C. Boyle Dam would eliminate the hydropower peaking operations, which would affect recreational flows within Hydroelectric Reach under the Proposed Project (Volume III Attachment 1 Section 3.20.5 *Recreation – Potential Impacts and Mitigation*). This would result in a significant impact to whitewater

boating opportunities in the Hell's Corner Reach (within the upper portion of the Hydroelectric Reach) for three months during the late summer and early fall. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in recreational impacts associated with the loss of acceptable flows for whitewater boating opportunities as compared to existing conditions due to the loss of hydropower operations.

Beneficial Recreation effects associated with the Proposed Project would include: an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach; potential increase in the number of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months; removal of the dams would help eliminate barriers to volitional fish passage in the Klamath River upstream of the Lower Klamath Project, which would beneficially affect recreational fishing at these upstream locations; and improved water quality conditions would result in long-term beneficial effects for water-contact-based recreational activities.

Conclusions

As indicated above, the Project would result in significant unavoidable impacts associated with changes to or loss of river conditions that support whitewater boating in the Hell's Corner reach in the upper portion of the Hydroelectric Reach. The proposed project would have a number of beneficial effects related to recreation including, an increase in the number of days with acceptable flows for whitewater boating in the Copco No. 2 Bypass Reach; potential increase in the number of days with acceptable flows for whitewater boating in the J.C. Boyle Bypass Reach outside of the current high demand months; increased recreational fishing opportunities; and improved water quality for water-contact-based recreational activities. Individually and collectively, the significant and unavoidable recreational effects of the Proposed Project are outweighed by the recreational benefits of the Proposed Project and are therefore acceptable.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

The above stated reasons summarize the benefits of the proposed Project. Along with the objectives stated at the beginning of this document, the State Water Board finds that any one of the environmental, technological, policy, and economic benefits of the proposed Project set forth above is sufficient by itself to warrant approval of the proposed Project. These overriding considerations justify adoption of the proposed Project and certification of the completed Final EIR. This determination is based on the findings herein and the evidence in the record.

Hazards and Hazardous Materials

Overview

The short-term construction-related activities associated with the Proposed Project and impacts could cause the removal of existing hazardous materials the transport, use, disposal and potential release of hazardous materials. An increased need for emergency services is also likely during construction activities and, as described in Volume I Section 3.22 Transportation and Traffic, project-related equipment and debris hauling may conflict with the ability to provide required emergency services. Consideration has been provided for the potential for accidental release of hazardous materials during routine transport along roadways that would be shared with public vehicles. In addition, the loss of reservoirs could also result in potential long-term impacts to future fire-fighting.

The Final EIR examines the potential effect of the Proposed Project related to hazards and hazardous materials. As discussed in detail in EIR Volume Section 3.21 Hazards and Hazardous Materials, the State Water Board concludes that Potential Impacts 3.21 -3, 3.21-5, 3.21-6, and 3.21-8 (short-term) would not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effects associated with hazards and hazardous materials are set out below.

CEQA Findings

Potential Impact 3.21-1

The State Water Board finds that the Proposed Project could result in potentially significant effects associated with construction-related activities that could result in substantial exposure to hazardous materials through the routine transport, use, or disposal of hazardous materials. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that in the short term, construction-related dam removal would involve routine transport, use, and disposal of general construction waste materials (e.g., concrete, rebar, building waste, power lines; see also Volume III Appendix B: Definite Plan – Sections 5.3–5.5) and some hazardous materials (e.g., treated lumber, asbestos, lead, PCBs, fuels, gases, etc.) would be encountered, used, transported and disposed of during those construction activities, which could result in short-term significant impacts.

Recommendations of the Phase I and Phase II reports prepared for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include development of a Soil and Groundwater Management Plan (SGMP) and Waste Management Plan (WMP) for each facility, compliance with

existing referenced regulations, and development of asbestos abatement project design manuals with technical specifications and abatement plans.

The Proposed Project includes an assessment of roads, intersections, bridges and culverts (Volume II Appendix B: Definite Plan – Appendix K) within the Area of Analysis for hazards and hazardous materials and proposes a number of improvements to help reduce the potential for accidental release of hazardous materials during transport of these materials to and from the dam sites. The proposed replacements and upgrades to transportation structures, as well as proposed construction-related traffic management, including signage, flaggers, and traffic coordination (Volume II Appendix B: Definite Plan – Appendix O2), would reduce the risk of traffic accidents that could result in exposure to quantities of hazardous, or acutely hazardous, materials that would be harmful to the public or the environment (Volume III, Attachment 1, pages AT1-979 to AT1-982).

Further, existing federal and state regulations require the KRRC and its construction contractors to undertake a number of measures related to hazardous materials. KRRC is developing a dam safety program that would ensure that removal of the Proposed Project would be undertaken in a manner that minimizes risk to people, structures, infrastructure, and the natural resources of the Klamath River Basin (Volume II Appendix B: Definite Plan – Section 3).

The KRRC and its contractors are also required to comply with the terms and conditions in the State Water Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; State Water Board Order 2009-0009-DWQ, as amended by State Water Board Orders 2010-0014-DWQ and 2012-0006-DWQ), and ongoing amendments during the life of the Proposed Project.). Hazardous materials, substances, and waste within the Area of Analysis for hazards and hazardous substances are regulated by several other federal and state laws and policies. Compliance with required regulations would substantially minimize the potential impact of hazardous materials on the public and the environment during the routine transport, use, or disposal of hazardous materials (Volume III, Attachment 1, pages AT1-979 to AT1-983).

The Proposed Project also includes a Hazardous Management Plan (Volume II Appendix B: Definite Plan – Appendix O3 Hazardous Materials Management Plan), which indicates requirements for handling, disposal, testing requirements, and decontamination of hazardous materials. The Hazardous Materials Management Plan also notes that any additional hazardous materials noted during the Phase I site visits and Phase II investigations would be included in an updated Hazardous Materials Management Plan and the contractor would sample and test for asbestos, lead and PCB's at all structures to be removed. The Hazardous Materials Management Plan is required to comply with, among other regulations, California Health and Safety Code, title 27, division 20, chapter 6.95, sections 25500 through 25545, and California Code of Regulations title 19, division 2, chapter 4.

In addition to the measures included in the Proposed Project, Mitigation Measure HZ-1 would be necessary to ensure that adherence to existing regulations are included in contractor bid documents. This includes that the findings and recommendations of the Phase I and Phase II Environmental Site Assessment reports would be added to the Hazardous Materials Management Plan and Health and Safety Plan. With implementation of Mitigation Measure HZ-1, potential impacts due to exposure to hazardous materials during the proposed construction-related activities would be less than significant (Volume III, Attachment 1, pages AT1-979 to AT1-983).

Mitigation Measure HZ-1 – Hazardous Materials Management.

No later than six months following issuance of the FERC license surrender order, and prior to the start of pre-dam removal activities and any construction activities, the KRRC shall submit a Final Hazardous Materials Management Plan (Final Hazardous Materials Management Plan) to the State Water Board Deputy Director for review and approval. The State Water Board has authority to review and approve any final Hazardous Materials Management Plan through its water quality certification under Clean Water Act Section 401. The State Water Board has issued a draft water quality certification¹⁷¹ which sets forth monitoring and adaptive management requirements for any Hazardous Materials Management Plan to meet, as Condition 11. Additionally, the Oregon Department of Environmental Quality has issued a water quality certification that sets forth water quality monitoring and adaptive management conditions for points upstream of California.

Consistent with the above, the Final Hazardous Materials Management Plan shall include any modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff that provide the same or better level of protection regarding procedures for proper disposal or abatement of hazardous materials encountered during Proposed Project activities; proper storage, containment, and response to spills caused by the Proposed Project; and proper removal and disposal of septic tanks as part of the Proposed Project.

The Final Hazardous Materials Management Plan shall also describe how the elements of the KRRC's proposed Health and Safety Plan (Appendix B: Definite Plan – Appendix O4), the Spill Prevention, Control, and Countermeasure Plan (Appendix B: Definite Plan – Appendix O4), the Emergency Response Plan (Appendix B: Definite Plan – Appendix O4), and the Traffic Management Plan (Appendix B: Definite Plan – Appendix O2) are coordinated together, and as such, adequately protect water quality with respect to hazardous materials management. In addition, the findings and recommendations of the Phase I and Phase II reports for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include development of a Soil and Groundwater Management Plan (SGMP) and Waste Management Plan (WMP) for each facility, compliance with existing referenced regulations, and development of abatement project design manuals with technical specifications and abatement plans.

The KRRC shall implement the Final Hazardous Materials Management Plan upon receipt of State Water Board Deputy Director approval and any changes to the Hazardous Materials Management Plan must be approved by the State Water Board Deputy Director prior to implementation.

The KRRC shall provide monthly reporting to the State Water Board detailing the volumes of hazardous materials and wastes that were cleaned up and disposed of from site construction activities and any other modifications to the proposed Hazardous Materials Management Plan developed in coordination with State Water Board staff.

Potential Impact 3.21-2

The State Water Board finds that the Proposed Project could result in potential upset and/or accidental release of hazardous materials that result in substantial exposure to the environment during the short-term and this would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

See discussion above Potential Impact 3.21-1. The EIR explains that a reasonably foreseeable condition that could result in an upset involving the release of hazardous materials into the environment would occur from such natural events, such as earthquakes, floods or fires or from accidents during construction activities. Fuel storage tanks used for construction could rupture or spill and hazardous materials could be carried away by floodwaters. Proposed Project workers, the public sharing the roads with construction vehicles, and/or the environment could be exposed to harmful levels of hazardous materials due to accidental releases during construction activities. Accidental release of hazardous materials (from vehicle fuels, solid waste, materials and supplies) could also occur during transport as a result of vehicular accidents due to increased construction-related traffic and/or as a result of inadequacies in the capacity, design or traffic control of the roads that would be used for construction-related activities (Figure 3.22-1). Any of these situations under the Proposed Project would result in a significant impact.

Volume II Appendix B: Definite Plan – Appendix O2 Traffic Management Plan, Appendix O3 Hazardous Materials Management and Appendix O4 Emergency Response Plan complement one other with respect to pre-planning and response efforts to minimize the risk of potential upset and accident conditions involving the release of hazardous materials. Since the responsibility of finalizing these plans fall on the KRRC and the construction contractors, Mitigation Measure HZ-1 assures that the contractor(s) are aware of the federal and state requirements and submit updated plans that are geared towards their strategies and methods for addressing this issue.

With implementation of Mitigation Measure HZ-1, impacts due to potential upset and/or accidental release of hazardous materials that result in substantial exposure to the

environment during the proposed short-term, construction-related activities would not result in a significant impact.

Potential Impact 3.21-4

The State Water Board finds that the Proposed Project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could result in substantial exposure to hazardous materials. This would be a potentially a significant environmental effect. However, changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains The Proposed Project is not located on a site which is currently included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, the type of use and activities and the length of time these activities have been occurring within the Proposed Project Area suggest the possibility that contaminated sites/soils exist on site. In addition, the Proposed Project could result in an impact from known and unknown contaminants (such as dioxins) if, during construction activities, these materials are not handled and disposed of properly. Construction activities include drilling and cutting into the large quantities of concrete slated for removal under the Proposed Project (i.e., greater than 100,000 yd³) (Volume I Table 2.7-3, Table 2.7-4, and Table 2.7-7) could result in dust that releases toxic substances and would be harmful to the public or the environment, which would be a significant impact.

The State Water Board received a submittal from PacifiCorp dated December 30, 2019 (PacifiCorp 2019), which included redacted versions of Phase I and Phase II reports (KRRC 2019 (c)-(l)). These reports disclosed the types and locations of hazardous materials at the various facilities, which is consistent with information in the Definite Plan, Volume I Appendix O-3 Hazardous Materials Management Plan. In addition, the findings and recommendations of the Phase I and Phase II reports for each separate facility shall be incorporated into the Final Hazardous Materials Management Plan. These recommendations include development of a Soil and Groundwater Management Plan (SGMP) and Waste Management Plan (WMP) for each facility, compliance with existing referenced regulations, and development of asbestos abatement project design manuals with technical specifications and abatement plans (Volume III, Attachment 1, , pages AT1-979 to AT1-983).

In addition to the measures included in the Proposed Project, Mitigation Measure HZ-1 (included above) would be necessary to ensure that adherence to existing regulations are included in contractor bid documents. This includes that the findings and recommendations of the Phase I and Phase II Environmental Site Assessment reports would be added to the Hazardous Materials Management Plan and Health and Safety Plan. With implementation of Mitigation Measure HZ-1, potential impacts due to

exposure to hazardous materials during the proposed construction-related activities would be less than significant (Volume III, Attachment 1, pages AT1-979 to AT1-984).

Potential Impact 3.21-7

The State Water Board finds that the Proposed Project could result in a significant impact associated with construction-related traffic, which may interfere with emergency response on rural roads surrounding the Lower Klamath Project, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR's discussion of Potential Impact 3.21-7 explains that the Proposed Project could result in short-term construction-related impacts consisting of an increase in traffic on narrow rural roads from commuting workers, hauling of large equipment and disposal of wastes. This additional traffic could result in interference to emergency response vehicles as well as create a situation requiring additional need for emergency response due to personal and vehicular accidents, natural and worksite caused fires, and accidental releases of hazardous materials, particularly given the rural nature of the Area of Analysis for hazards and hazardous materials. This would be a significant impact.

However, the Proposed Project (Volume I Section 2.7.8.11 Emergency Response) contains a description of an Emergency Response Plan (for details see Volume II Appendix B: Definite Plan– Appendix O4). According to that document, construction contractors would be required to develop a Final Emergency Response Plan to develop and implement procedures to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies. To reduce potential impacts all construction workers would be required to possess the knowledge and resources to adequately respond to emergencies, where emergency preparation and work should be overseen by a designated health and safety manager. In addition, responding agencies/departments should be made aware of the activities during the construction period so that they can implement their existing regulatory framework, establish an emergency contact process, and undertake inspections as needed throughout project implementation.

The draft Traffic Management Plan (Volume II Appendix B: Definite Plan – Appendix O2) further notes that the KRRC's contractor would perform a risk assessment of all intersections and roadways as part of the final Traffic Management Plan. As explained below under Transportation and Traffic, implementation of Mitigation Measure TR-1 would require additional components beyond those listed as part of the Proposed Project (i.e., the final versions of the Traffic Management Plan and Emergency Response Plan) and these components would be necessary to adequately implement an Emergency Response Plan that addresses short-term construction-related impacts, consisting of an increase in traffic on narrow rural roads from commuting workers, hauling of large equipment and disposal of wastes, to the point that the potential impact

would be less than significant. (Volume III Attachment 1 pages AT1-987-AT1-988.) In other words, the State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level. (Volume III Attachment 1 pages AT1-987-AT1-988.)

Potential Impact 3.21-8 (long-term)

The State Water Board finds that the Proposed Project would result substantial increase in public's risk of loss, injury or death associated with wildland fires over the long-term where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source. The State Water Board finds that this is a significant impact that is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR's discussion of impact 3.21-8 explains that in the long term, the loss of the reservoirs, which are currently part of the existing conditions, would result in a substantial decrease in fire protection involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires within the Area of Analysis for public services. While the proposed dry hydrants would provide a source of water to ground crews for firefighting, they do not offer the same degree of access as helicopter use of the reservoirs for wildfires occurring in the vicinity of the Lower Klamath Project, for which the reservoirs are the closest and safest source of water for aerial crews. One option that would assist in mitigating this impact would be to include appropriately placed dip ponds within the Proposed Project's restoration areas.

Recommended Measure PS-1 (refer to Public Services section above) requires the KRRRC and/or its Contractor(s) to develop, in consultation with the CALFIRE Siskiyou Unit, an updated Fire Management Plan that identifies long-term water sources for helicopter and ground crews (including construction and use of proposed dry hydrants, dip ponds, or other alternatives). Overseeing development and implementation of terms and conditions relating to fire management does not fall within the scope of the State Water Board's water quality certification authority. The State Water Board anticipates that in the absence of the reservoirs, the identification and use of alternative water sources (e.g., dip ponds, river pools suitable for helicopter drafting, dry hydrants) for both ground and helicopter crews that are developed through the FERC process would significantly ameliorate response times and provide a level of protection to substantially reduce the public's risk of loss from wildfires, thereby reducing impacts to less than significant in many instances. However, where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the reservoirs would otherwise have been the nearest water source, long-term impacts to the public's risk of loss from wildfires remain significant and unavoidable.

Analysis of potential alternatives to the Proposed Project shows that any alternative that involves deconstruction of all or part of any of the Lower Klamath Project dams (i.e., Partial Removal Alternative, Two Dam Removal Alternative, Three Dam Removal Alternative, No Hatchery Alternative) would result in significant impacts associated with suitable replacement water sources that cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source.

Under the Continued Operations with Fish Passage and No Project alternatives, dam removal would not occur and there would be no loss of Lower Klamath Project reservoirs. Therefore, no impact to suitable water sources for fighting wildfires would occur under these alternatives. However, these alternatives would result in significantly fewer benefits (or no benefits under the No Project Alternative) for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.21-8

As indicated above the loss of the reservoirs due to the Proposed Project, which are currently part of the existing conditions, would result in a substantial decrease in fire protection involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires within the Area of Analysis for public services. As explained above, mitigation/avoidance of this impact is not feasible, although the KRRC's most recent submittal to the State Water Board indicated that progress on eliminating this risk is moving forward. Approval of the Proposed Project thus would result in a significant impact due to a substantial increase in public's risk of loss, injury or death associated with wildland fires over the long-term where suitable replacement water sources cannot be identified in close proximity to a fire in a location for which the Lower Klamath Project reservoirs would otherwise have been the nearest water source.

However, the Proposed Project would have broad environmental beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax traillii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts related to a substantial decrease in fire protection

involving wildland fires due to longer response times and limitations on access to Klamath River water for fighting fires.

Conclusions

As indicated above, the Proposed Project would result in significant and unavoidable long-term impacts due to loss in wildfire fighting capabilities due to the removal of the reservoirs. The Proposed Project will also result in significant environmental benefits.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Therefore, the State Water Board finds the short-term exceedance of NOx thresholds to be acceptable.

Transportation and Traffic

Overview

Construction activities associated with the Proposed Project could have a significant effect on safety or performance of the circulation system, including transit, roadways, bicycle lanes or pedestrian paths. The existing conditions of the roadways and other infrastructure are not adequate for all of the construction activities included in the Proposed Project. The existing roadways in the Area of Analysis are generally narrow, rural roads that have been used primarily for a small amount of residential use and the existing seasonal recreational use demand associated with the reservoirs. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The EIR examines the potential effect of the Proposed Project on transportation and traffic during construction and operation. As discussed in detail in Section 3.22, the State Water Board concludes that Potential Impact 3.22-6 will not be significant. CEQA findings and statements of overriding considerations for the remaining potentially significant effect to transportation and traffic is set out below.

CEQA Findings

Potential Impact 3.22-1

The State Water Board finds that the Proposed Project could result in a significant impact associated with an increase in traffic in excess of the capacity or design of the road improvements or impairment of the safety or performance of the circulation system, including transit, roadways, bicycle lanes or pedestrian paths, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that short-term impacts to local roads would be primarily limited to the pre-construction period, the dam removal period (May through September of the drawdown year; Table 2.7-1) and one to five years after dam removal during restoration and monitoring activities. The pre-construction and dam removal period would include the import and export of materials and equipment, as well as the construction workforce associated with all the elements of the Proposed Project. Dam removal itself would result in the highest projected construction intensity under the Proposed Project, and thus the greatest workforce and number of associated vehicle trips. Volume I, Table 3.22-5 presents the projected size of the dam removal workforce that would be commuting daily to the site, and the duration of the activity for each of the dams (EIR, page 3-1069).

Because recreational facilities at the reservoirs would be closed during the construction period, this analysis assumes that traffic associated with recreational use of the reservoirs would cease during the construction period. When the additional traffic flow from the short-term concurrent activities associated with dam removal is compared to the current traffic flow for recreational use of the reservoirs, the workforce traffic is similar to the current recreational use traffic (EIR, page 3-1070).

Roadways, bridges, and culverts that may require improvements over their current conditions in order to withstand construction-related traffic under the Proposed Project are listed in Volume I Section 3.22.2.3 Road Conditions. The Proposed Project would include improvement of these facilities to a level that would enable them to accommodate traffic associated with the Proposed Project without being degraded below baseline conditions. Final designs for planned improvements would be developed during the detailed design phase or as part of a contractor bid document for the Proposed Project and would inform decisionmakers regarding the necessity and scope of additional environmental review. In addition, the discussion of impacts and mitigation measures set forth in this EIR, including Mitigation Measures WQ-1, TER-1, TER-2, TER-3, TCR-1, TCR-2, TCR-3, TCR-4, and HZ-1, would assist those decisionmakers in determining how the impacts of road improvements can be mitigated (EIR, pages 3-1071 – 3-1072). The EIR also explains that the Proposed Project would not conflict with the measures set forth in the Regional Transportation Plan or with the goal and objective of the Land Use and Circulation element of the County's general plan does not contain measures or programs that would conflict with the Proposed Project in a manner that would adversely affect the environment (EIR, page 3-1072).

Overall, the additional traffic related to pre-construction activities, dam removal, waste transportation, restoration and monitoring activities, and planned improvements to existing roads, bridges and culverts under the Proposed Project would replace, and be similar to existing recreational use levels and thus would not have substantial, short-term impacts on the level of service (LOS) in the Area of Analysis. However, the proposed activities could result in impairing the safety or performance of the circulation system for all users, resulting in a potentially substantial risk of harm to the public (EIR,

page 3-1072). As part of mitigation, the Proposed Project includes a draft Traffic Management Plan that identifies the key requirements that would be incorporated by the construction contractor into a final Traffic Management Plan. The major objectives of the Traffic Management Plan are to maintain efficient and safe movement of vehicles through the construction zone covered by activities in the Definite Plan (Volume II Appendix B) and to provide public awareness of potential impacts to traffic on both haul routes and access roads to the four dam complexes.

Mitigation Measure TR-1 – Transportation and Traffic

- A. The KRRC and/or its contractor(s) shall develop a final Traffic Management Plan that provides:
1. Implementation details consistent with all applicable regulatory requirements including the latest version of the Caltrans California Manual on Uniform Traffic Control Devices (MUTCD, Caltrans 2018b), Caltrans Traffic Management Plan (TMP) Guidelines, Oregon Department of Transportation (ODOT) Oregon Supplement to the MUTCD, Federal Highway Administration MUTCD, ODOT Traffic Control Plans Design Manual, and ODOT TMP Project Level Guidance Manual. KRRC will coordinate with the noted agencies (Caltrans, ODOT, Siskiyou and Klamath County Public Works and Sheriff's Departments, California Highway Patrol and Oregon State Police, CALFIRE, Oregon Department of Forestry [ODF] Fire Division, and other emergency response agencies) as part of the detailed design phase and prior to start of construction. Potential conflicts with bicycle and pedestrian use, as well as transit and school bus service, need to be addressed in the Traffic Management Plan. The final version of the Traffic Management Plan, after coordination with the above referenced agencies, shall be received by the State Water Board prior to the start of construction.
 2. Each road, bridge, and culvert improvement project included in the Proposed Project, or any other road, bridge, or culvert improvement project that is identified as necessary for the Proposed Project, shall be constructed consistent with the latest version of the Caltrans Highway Design Manual (Caltrans 2018c), Caltrans Standard Plans, Caltrans Standard Specifications, or ODOT Highway Design Manual, ODOT, Standard Drawings and Standard Details, and ODOT Standard Specifications, or equivalent, and shall not conflict with any applicable plan, ordinance, or policy regarding performance of the transportation system, traffic safety and/or congestion management within the Area of Analysis. Construction shall not begin until all final designs for road, bridge, and culvert improvement projects included in the Proposed Project have been received and approved, as necessary, by the county and other responsible agencies.

3. The KRRC shall be responsible for repairing and/or rehabilitating any Siskiyou County roadways within the traffic and transportation Area of Analysis that are damaged or otherwise adversely impacted by Proposed Project activities, such that they are in a condition equal to or better than they were before dam removal activities.
- B. The KRRC and/or its construction contractor(s) shall develop an Emergency Response Plan with details and procedures to be put in place to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies through coordination with emergency response agencies, as described in Appendix B: *Definite Plan – Appendix O4*.

The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level.

Potential Impact 3.22-2

The State Water Board finds that the Proposed Project could conflict with an applicable congestion management program for designated roads or highways that would result in increased risk of harm to the public, resulting in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

As the EIR indicates, the summary for Potential Impact 3.22-1 also applies to Potential Impact 3.22-2. The Traffic Management Plan mitigation would also apply to this impact. The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process would reduce impacts to a less than significant level.

Potential Impact 3.22-3

The State Water Board finds that the Proposed Project could result in a substantial increase in hazards due to a design feature or incompatible uses associated with construction-related traffic that would result in an increased risk of harm to the public, which would result in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains the existing conditions of the roadways and other infrastructure are not adequate for all of the construction activities included in the Proposed Project, as described in Volume II Appendix B: Definite Plan – Appendix K. As described in Volume I, Impacts 3.22-1 and 3.22.-2, the improvements may include five bridges (two

of them over the Klamath River) that need to be replaced: four bridges for construction purposes, and one bridge post-construction because it is built on reservoir sediment. There are 13 or more culverts that need replacement. As described in Volume II Appendix B: Definite Plan – Appendix K, there are portions of 20.3 miles of road that would need partial road improvements (EIR, page 3-1074).

The Proposed Project includes general information regarding planned improvements to existing roads, bridges, and culverts to support short-term construction activities. While the general information suggests that none of the road, bridge, and culvert improvement projects would substantially increase traffic or transportation hazards due to a design feature or incompatible use, it notes that details of each improvement would be developed during the detailed design phase or as part of a contractor bid document for the Proposed Project (Volume II Appendix B: Definite Plan). Implementation of Mitigation Measure TR-1, listed above, would require additional components beyond those listed as part of the Proposed Project (i.e., the final versions of the Traffic Management Plan and Emergency Response Plan) and these components would be necessary to reduce potential traffic and transportation hazards due to a design feature or incompatible uses to less than significant. The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process would reduce impacts to a less than significant level.

Potential Impact 3.22-4

The State Water Board finds that the Proposed Project could result in inadequate emergency access that would result in an increased risk of harm to the public, resulting in a significant impact but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR indicates the peak of construction-related traffic would generally be for a two-year period (Table 2.7-1). Changes to traffic types and patterns could increase the potential for traffic-related conflicts due to the Proposed Project (e.g., construction-related traffic) as well as other users of the road, whether they be residents, or motorized and non-motorized transportation users. (However, as described in Volume I Section 3.22.5, it is assumed that recreation-related trips would effectively be replaced by construction worker trips during the construction period, which helps to limit traffic increases resulting from the Proposed Project.) Changes in the level of traffic and types of traffic-related conflicts may affect both the response time and the frequency of calls requiring emergency response (EIR, page 3-1075).

The Proposed Project includes an Emergency Response Plan that addresses transportation-related emergency concerns (e.g., emergency access and response), while a final Emergency Response Plan, with additional details, would be required from

the construction contractor (Volume II Appendix B: Definite Plan – Appendix O4). Emergency response is also discussed in Volume I Section 3.17 Public Services and Section 3.21 Hazards and Hazardous Materials, which address impacts related to emergency response providers as well as the risk of increased hazards such as wildfires and adequate access for abating wildland fires (EIR, page 3-1075).

Implementation of Mitigation Measure TR-1, described above, would require additional details and procedures to be put in place to help prevent incidents, to ensure preparedness in the event incidents occur, and to provide a systematic and orderly response to emergencies through coordination with emergency response agencies, as described in Volume II Appendix B: Definite Plan – Appendix O4, which would render potential traffic and transportation impacts of the Proposed Project to levels similar to baseline conditions. Because wildfires can spread at a rapid speed and involve high risks, any amount of additional response time compared with existing conditions could result in a substantial increased risk of loss, injury, or death involving wildland fires and this would be a significant impact. However, the State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process that provide the same or better level of protection for transportation and traffic would reduce impacts to a less than significant level.

Potential Impact 3.22-5

The State Water Board finds that the Proposed Project construction-related activities would conflict with public transit, bicycle, or pedestrian facilities, or decrease of the performance or safety of such facilities resulting in an increased risk of harm to the public, resulting in a significant impact, but that changes or alterations have been required in, or incorporated into, the project, which will reduce the potential impact to less than significant (Cal. Code Regs., tit. 14, § 15091(a)(1)).

The EIR explains that short-term impacts to public transit, bicycle, or pedestrian facilities would result in an increased risk of harm to the public if construction-related activities substantially decrease the safety of such uses utilizing the roadways within the Area of Analysis. As described in Volume I Section 3.22.2.5 Public Transit, there is minimal public transit, including bus service, rail service, or airports in the Area of Analysis. Construction-related traffic conflicts could occur where there is an occasional bicyclist or pedestrian using the roadways or when public transportation, including school bus traffic, is using the same roads as construction-related traffic. There is no information available on existing pedestrian or bicycle facilities. A review of Google Earth and Street View (2018) indicated the general absence of sidewalks and bike paths, and no information is available on the amount of bicycle or pedestrian use. Bicyclist or pedestrian use would be subject to a decrease in the performance and safety of the roadways utilized by the Proposed Project during construction activities, resulting in a potentially substantial increased risk of harm to the public, which would be a significant impact (EIR, page 3-1076).

The Proposed Project includes management strategies in the draft Traffic Management Plan (Mitigation Measure TR-1) that would identify areas where pedestrians and cyclists could potentially share roads with construction vehicles. KRRC's contractor will install appropriate signage to notify both construction vehicle drivers and non-motorized users of each other's potential presence on the roads. If an unacceptable level of risk to non-motorized users is deemed to persist, KRRC's contractor will arrange appropriate detours to allow continued movement for such users (Volume II Appendix B: Definite Plan – Appendix O2).

The State Water Board concludes that implementation of the final Traffic Management Plan and Emergency Response Plan, including the additional details in Mitigation Measure TR-1 and any modifications developed through the FERC process would reduce impacts to a less than significant level.

Conclusions

Based on the foregoing and the administrative record, the State Water Board finds that the potentially significant impacts of the Proposed Project to Transportation and Traffic resources will be mitigated to less than significant.

Noise

Overview

Components of the Proposed Project could have a significant effect noise and vibration during construction activities due to the proximity of sensitive receptors. However, removal of the reservoirs is necessary to accomplish the intended long-term water quality and fish passage improvements.

The Final EIR examines the potential effect of the Proposed Project associated with noise and vibration generated during construction and operation. As discussed in detail in Volume I Section 3.23, the State Water Board concludes that Potential Impacts 3.23-3, 3.23-7, 3.23-8, 3.23-9, and 3.23-10 will not be significant.

CEQA findings and statements of overriding considerations for the remaining potentially significant effect of noise and vibration associated with the Proposed Project is set out below.

CEQA Findings

Potential Impact 3.23-1

The State Water Board finds that the Proposed Project would result in a short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that for several specific types of construction equipment (specifically dozers, jackhammers, and tractors), the maximum allowable noise level identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978) of 81 dBA at 50 feet (converted from maximum allowable noise levels from construction equipment at 100 feet) are lower than the typical noise levels produced by those equipment types according to the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006). This is summarized in Volume I Table 3.23-5, with noise levels ranging from 82 dBA to 89 dBA at 50 feet for these types of construction equipment. Given the maximum allowable noise levels identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978), any use of dozers, jackhammers, and/or tractors during the Proposed Project would constitute an exceedance of County maximum allowable noise levels and this would be a significant impact (EIR, page 3-1093).

The Proposed Project includes a Noise and Vibration Control Plan (NVCP) (Volume II Appendix B: Definite Plan – Appendix O5) that would minimize short-term outdoor noise impacts, and which specifies that a Final NVCP, with additional details, would be required of the construction contractor. The proposed NVCP requires preparation and implementation of the Final NVCP and would be necessary to reduce potential noise impacts to the degree feasible. However the Final NVCP would not cause equipment noise levels from dozers, jackhammers, and tractors to comply with the Siskiyou County maximum allowable noise levels for these specific equipment types since the maximum allowable noise levels are lower than the typical noise levels produced by those equipment types according to the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006). Therefore, this impact would be significant and unavoidable (EIR, page 3-1094).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-2

The State Water Board finds that the Proposed Project would result in short-term increases in daytime and nighttime noise levels affecting residents near Copco No. 1 Dam due to construction activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

Noise associated with construction of the Proposed Project was modeled (Volume II Appendix T) to determine impacts. The EIR explains that the noise model used the maximum allowable noise level in the Siskiyou County General Plan Noise Element (1978) for equipment (specifically dozers, jackhammers, and tractors) whose maximum sound level (L_{max}) in the FHWA's Roadway Construction Noise Model User's Guide (FHWA 2006) exceeds the Siskiyou County regulation. This would cause the noise model (Appendix T) to slightly underestimate noise levels during construction. However, for the other 17 equipment types listed in the noise model, appropriate equipment noise levels consistent with FHWA 2006 were used (EIR, page 3-1094). The noise model (Appendix T) also does not account for blasting during Shift 2 at Copco No. 1 Dam or during any work shift at Iron Gate Dam and thus underestimates the potential noise impacts.

Volume I Table 3.23-6 lists the predicted average one-hour Leq at Copco No. 1 Dam and Iron Gate Dam and at the receptors, the existing Leq without the project, and the increase in noise level at the receptors that would occur as a result of the Proposed Project. The threshold of significance for this impact is "a greater than 10 dBA increase in the daytime or nighttime outdoor one-hour Leq at the receptor from onsite construction operations." Compared to the daytime and nighttime existing outdoor noise levels of 40 and 30 dBA, the resulting increase at Copco No. 1 Dam ranges from 9 to 22 dBA, depending on the time of day (Volume I Table 3.23-6 and Appendix T). Copco No. 2 Dam removal was not analyzed as the line of sight to the closest receptor is assumed to be completely blocked, preventing noise disturbance at this receptor. J.C. Boyle Dam removal was not analyzed because there are no receptors within one mile and it is located in Oregon. Significant increases in Leq caused by the Proposed Project are shown in bold in Volume I Table 3.23-6. As indicated in Volume I Table 3.23-6, work during both shifts exceeds the significance criteria at all times because of the high source noise level. This increase in outdoor noise levels would have a short-term significant noise impact on the residential area near Copco No. 1 Dam (EIR, page 3-1095 – 3-1096).

As indicated above, the Final NVCP would not be enough to reduce short-term construction-related noise impacts to less than significant levels at sensitive receptors. Therefore, noise impacts would remain significant and unavoidable for outdoor receptors during Copco No. 1 Dam deconstruction (EIR, page 3-1096).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-4

The State Water Board finds that the Proposed Project would result in short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that the predicted Leq from the Iron Gate facilities removal is approximately 91 dBA at 50 feet during both shifts (6 a.m. to 4 p.m. and 6 p.m. to 4 a.m.). The combination of existing noise and attenuation due to distance, atmospheric effects, ground absorption, and terrain effects would result in a Leq of approximately 46 dBA at the nearest receptor (Iron Gate Hatchery and associated facilities) (Volume I Table 3.23-6) (Volume II Appendix T). The estimated noise level at the receptor exceeds the significance criterion for nighttime noise during all proposed night work (7

p.m. to 4 a.m. and 6 a.m. to 7 a.m.). Therefore, construction noise would cause a short-term significant noise impact on the residential area near Iron Gate Dam at night. Implementation of the proposed NVCP (as described in Potential Impact 3.23-1) would reduce this noise impact; however, it would not reduce nighttime outdoor noise impacts to less than significant levels at sensitive receptors. Thus, nighttime noise impacts would remain significant and unavoidable for outdoor receptors during Iron Gate Dam nighttime deconstruction (EIR, page 3-1097).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-5

The State Water Board finds that the Proposed Project would result in short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that equipment, including planes, barges, trucks, and helicopters, would be used for reservoir restoration at the same time as and subsequent to dam deconstruction. This reservoir restoration activity would add to the noise levels generated by dam deconstruction activities in and around the dam sites described

above. Hydroseeding methods include by barge along the reservoir bank, by helicopter along steep slopes, by airplane along uneven large areas, and by trailer-mounted blower for areas easily accessible by truck. Equipment noise from embankment restoration would cause a short-term significant noise impact on the residential areas near the Copco No. 1 and Iron Gate reservoirs and contribute to the noise levels generated by dam deconstruction in and around the dam sites. The Proposed Project includes development of a NVCP (Volume II Appendix B: Definite Plan – Appendix O5) to minimize noise impacts from construction activities. Implementation of the Final NVCP would reduce short-term outdoor noise impacts, but given that they would add to already significant noise levels generated during construction activities (Volume I Potential Impacts 3.23-2 and 3.23-4), noise impacts would remain significant and unavoidable for outdoor receptors during the reservoir restoration activities (EIR, page 3-1098).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Potential Impact 3.23-6

The State Water Board finds that the Proposed Project would result in a short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2,

and Iron Gate dams due to blasting activities during removal of the dams, resulting in a significant impact that is not feasible to mitigate or avoid (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that blasting at each dam is proposed to occur infrequently, would be restricted to the time between 8 a.m. and 6 p.m., and would be dependent on scheduling. The predicted vibration levels at sensitive receptors are summarized in Volume I Table 3.23-7. Blasting during the first shift at Copco No. 1 Dam is anticipated to result in PPV and Lv at the nearest receptor of 0.065 in/sec and 84 VdB, respectively. For reference, vibration levels without blasting are 0.002 in/sec and 53 VdB (Table 3.23-7) (Appendix T). Blasting during the first shift at Copco No. 1 Dam would exceed the significance criteria for Lv (Lv greater than 72 VdB at the receptor). The vibration model (Volume II Appendix T) did not account for the proposed blasting at either of the other dams. Blasting at Copco No. 2 and Iron Gate is proposed to occur infrequently between 8 a.m. and 6 p.m. Therefore, it is conservatively assumed that vibration levels at Copco No. 2 and Iron Gate dams during Shift 1 would also exceed the threshold of significance (EIR, page 3-1098).

The EIR concludes that construction activities (including blasting) would result in significant human annoyance levels for daytime vibration impacts at receptors near each of the three dams. The Proposed Project includes a Noise and Vibration Control Plan (NVCP) (Appendix B: Definite Plan – Appendix O5) that would minimize short-term outdoor noise impacts, and which specifies that a Final NVCP, with additional details, would be required of the construction contractor. The proposed NVCP requires preparation and implementation of the Final NVCP and would be necessary to reduce potential noise impacts to the degree feasible. The Final NVCP would minimize short-term outdoor noise impacts during blasting activities, but would not reduce impacts to less than significant levels at sensitive receptors. Therefore, daytime vibration impacts to humans would remain significant and unavoidable for outdoor receptors during the blasting activities (EIR, page 3-1099).

Analysis of potential alternatives to the Proposed Project shows that the level of overall construction activities due to dam deconstruction in California and construction of upstream and downstream fish passage in Oregon under the Three Dam Removal Alternative would be the same as those described for the Proposed Project and, therefore, generate similar noise and vibration levels as the Proposed Project and result in similar impacts.

Although there would be a decrease in construction-related activities under the Partial Removal, Two Dam Removal, and No Hatchery alternatives due to some of the Lower Klamath Project structures remaining in place, the degree of difference would not be sufficient to significantly reduce the potential effects of dam removal related to noise or vibration. Under the Continued Operations with Fish Passage Alternative, construction activities would occur to install upstream and downstream fish ladders at all four Lower Klamath Project dam complexes. Construction activities would result in potential noise

impacts in the same manner as described for the Proposed Project. Additionally, these alternatives would result in fewer benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Under the No Project Alternative, there would be no change to the operations or facilities of the Lower Klamath Project. Therefore, no potential impacts associated with noise and vibration levels from dam removal construction and reservoir restoration would occur. However, this alternative would result in no benefits for environmental resources compared to the Proposed Project and would not go as far towards meeting the Project's restoration purpose and objectives, and so these alternatives are not environmentally superior.

Statement of Overriding Considerations

Potential Impact 3.23-1

Given the maximum allowable noise levels identified in the Siskiyou County General Plan Noise Element (Siskiyou County 1978), any use of dozers, jackhammers, and/or tractors during the Proposed Project would constitute an exceedance of County maximum allowable noise levels. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment.

The Proposed Project will have significant beneficial environmental effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term exceedance of Siskiyou County General Plan criteria for maximum allowable noise levels from construction equipment.

Potential Impact 3.23-2

Construction work occurring during both daytime and nighttime shifts would generate noise levels that exceed the significance criteria of "a greater than 10 dBA increase in the daytime or nighttime outdoor one-hour Leq at the receptor from onsite construction operations" at all times because of the high source noise level. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project

thus will result in short-term increases in daytime and nighttime noise levels affecting residents near Copco No.1 Dam due to construction activities.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increases in daytime and nighttime noise levels affecting residents near Copco No. 1 Dam due to construction activities.

Potential Impact 3.23-4

The predicted Leq from the Iron Gate facilities removal is approximately 46 dBA at the nearest receptor (Iron Gate Hatchery and associated facilities) during both shifts (6 a.m. to 4 p.m. and 6 p.m. to 4 a.m.). The estimated noise level at the receptor exceeds the significance criterion for nighttime noise during all proposed night work (7 p.m. to 4 a.m. and 6 a.m. to 7 a.m.). As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities

As indicated above, the Proposed Project will have beneficial environmental effects including: significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increases in nighttime noise levels affecting residents near Iron Gate Dam due to construction activities.

Potential Impact 3.23-5

Equipment noise from embankment restoration would cause a short-term significant noise impact on the residential areas near the Copco No. 1 and Iron Gate reservoirs and contribute to the noise levels generated by dam deconstruction in and around the dam sites. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable effect associated with short-term increase in noise levels affecting residential areas near Copco No. 1 and Iron Gate reservoirs due to restoration activities.

Potential Impact 3.23-6

Blasting during the first shift at Copco No. 1 Dam would exceed the significance criteria for Lv (Lv greater than 72 VdB at the receptor). It is conservatively assumed that vibration levels at Copco No. 2 and Iron Gate dams during Shift 1 would also exceed the threshold of significance. Construction activities (including blasting) would result in significant human annoyance levels for daytime vibration impacts at receptors near each of the three dams. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus will result in short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2, and Iron Gate dams due to blasting activities during removal of the dams.

As indicated above, the Proposed Project will have several beneficial effects including significant improvement to Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. The short- and long-term benefits of the Proposed Project with respect to water quality and fish passage support the State Water Board's approval of the Proposed Project despite the short-term significant and unavoidable associated with short-term increase in vibration levels affecting residential areas near Copco No.1, Copco No. 2, and Iron Gate dams due to blasting activities during removal of the dams.

Conclusions

The above stated reasons summarize the benefits of the proposed Project. Along with the objectives stated at the beginning of this document, the State Water Board finds that any one of the environmental, technological, policy, and economic benefits of the proposed Project set forth above is sufficient by itself to warrant approval of the proposed Project. These overriding considerations justify adoption of the proposed Project and certification of the completed Final EIR. This determination is based on the findings herein and the evidence in the record.

Cumulative Effects

Overview

A list approach is used (Volume I Table 3.24-1) to analyze potential cumulative effects for each resource area, considering specific impacts of the Proposed Project in combination with potential impacts of other projects. The list for the Proposed Project cumulative effects analysis includes the following planned, approved, or reasonably foreseeable project types that would result in related or cumulative impacts when considered in combination with the Proposed Project: riverine restoration projects; terrestrial resource management, conservation and restoration projects; water flow and water quality resource management projects; wildfire; forest and wildfire management projects; cannabis cultivation projects; other agricultural and rural residential projects; mining and mining withdrawal projects; infrastructure and energy projects; other rezoning and development projects; and recreation projects.

The Final EIR examines the contribution of the Proposed Project on cumulative impacts. As discussed in detail in Volume I Section 3.24, the State Water Board concludes that Potential Impacts 3.24-1, 3.24-3, 3.24-5 through 3.24-32, 3.24-34 through 3.24-54, 3.24-56 through 3.24-63, and 3.24-66 will either not be significant or will be beneficial.

Beneficial effects of the Proposed Project include long-term cumulative change in the spatial extent, temporal duration, transport, or concentration of nuisance and/or noxious phytoplankton blooms and concentrations of algal toxins in the Hydroelectric Reach, Middle and Lower Klamath River, and Klamath River Estuary. In addition, the combined effect of the Proposed Project and the other restoration, flow enhancement, and water quality improvement projects would be beneficial for water quality, especially for water temperature and chlorophyll-a and algal toxins. The restoration, flow enhancement, and water quality improvement projects would increase the amount of cold water flowing in the river improving water temperature conditions for salmonids, while the Proposed Project would improve water temperature by returning more natural seasonal and daily variations. In combination with restoration, flow enhancement, and water quality improvement projects, the Proposed Project would help to offset the effects of climate change on late summer/fall water temperatures. Increases in river flows from restoration, flow enhancement, and water quality improvement projects would also be beneficial for water quality by diluting chlorophyll-a and algal toxins concentrations, while the Proposed Project would decrease high seasonal chlorophyll-a concentrations and periodically high algal toxin concentrations

CEQA findings and statements of overriding considerations for the remaining cumulative impacts is set out below.

CEQA Findings

Water Quality

Potential Impact 3.24-2

The State Water Board finds that the Proposed Project would result in a considerable contribution to short-term increases in suspended sediments under the Proposed Project in combination with the 2017 court-ordered flushing and emergency dilution flows. It is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The potential cumulative impact analysis examines whether the Proposed Project in combination with the 2017 flow requirements (i.e., 2013 BiOp Flows plus the 2017 court-ordered flushing and emergency dilution flows – now superseded by the 2019 BiOp flows) would potentially have a short-term significant cumulative effect on suspended sediments, with the incremental contribution of the Proposed Project being cumulatively considerable.

The EIR explains that there are one to two months when flushing flows may increase SSCs outside of the Proposed Project reservoir drawdown period since surface flushing flows potentially would occur until April 30 and deep flushing flows potentially would occur until May 31. Thus, there would be the potential for a cumulative short-term increase in SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combined effect of the Proposed Project and the 2017 flow requirements in water years when the Proposed Project reservoir drawdown flows do not meet the surface and/or deep flushing flow requirements. (EIR, Vol. III, pages AT1-1026 to AT1-1028)

Potential Impact 3.24-4

The State Water Board finds that the Proposed Project would result in a considerable contribution to short-term water quality effects of the Proposed Project in combination with wildfires and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The EIR explains that wildfires could potentially impact water quality by increasing SSCs due to increased erosion in burn areas. A late-season (e.g., November) wildfire during dam removal year 1 or 2 that burns the landscape near or within the water quality Area of Analysis and is followed by heavy rainstorms would potentially result in a short-term cumulative increase in the SSCs. Erosion from heavy rains on a burned area from a late-season wildfire could increase SSCs during the initial drawdown of Copco No. 1 Reservoir in dam removal year 1 or during the late-fall/early winter period in dam removal year 2 and result in SSCs exceeding the significance criteria (i.e., 100 mg/L for a continuous two week period) for a longer duration than under the Proposed Project alone. However, the short-term cumulative increase in SSCs from a late-season wildfire followed by heavy rains would not be likely to increase the magnitude of SSCs outside

the range modeled for the Proposed Project. Given that the Proposed Project exceeds significance criteria for SSCs, and because of the potential for an extended duration of elevated SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combination of the Proposed Project and wildfires, this short-term impact is conservatively assessed as cumulatively considerable.

Air Quality

Potential Impact 3.24-33

The State Water Board finds that the Proposed Project would result in a considerable contribution to short-term increases in NO_x emissions under the Proposed Project in combination with forest and wildfire management projects and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

During the Proposed Project construction period (Volume I Table 2.7-1), there are proposed wildfire management activities, including prescribed or controlled burning, on national forest lands in Siskiyou County (see Volume III Attachment 1 Table RE-3.24-1 for list of related projects). If these burning activities temporally overlap the Proposed Project construction period and produce substantial quantities of smoke near the Area of Analysis for air quality, they would result in significant and adverse emissions of criteria air pollutants within the air quality Area of Analysis. However, given that the Proposed Project would be well below thresholds for other criteria pollutants with mitigation, including PM₁₀, PM_{2.5}, CO, SO_x, and ROG, the incremental impact of the Proposed Project would not be cumulatively considerable with respect to those pollutants. Given the Proposed Project exceeds criteria thresholds for NO_x after the implementation of mitigation, the incremental impact of the Proposed Project to the total emissions would be cumulatively considerable.

Hazards and Hazardous Substances

Potential Impact 3.24-64

The State Water Board finds that the Proposed Project would result in a cumulatively considerable contribution to short-term and long-term hazards (fire-fighting water access) from the Proposed Project in combination with non-project activities and that it is not feasible to mitigate or avoid this impact (Cal. Code Regs., tit. 14, § 15091(a)(3)).

The Proposed Project will result in a long-term reduction in reservoir storage that can be used for fighting wildland fires. The impact is significant because it stands to increase public loss in case of a wildland fire, and unavoidable because it is a necessary consequence of removing the Lower Klamath Project dams and because the State Water Board cannot ensure implementation of the Fire Management Plan that would identify a replacement water source.

Statement of Overriding Considerations

Potential Impact 3.24-2

As indicated above there would be the potential for a cumulative short-term increase in SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combined effect of the Proposed Project and the 2017 flow requirements in water years when the Proposed Project reservoir drawdown flows do not meet the surface and/or deep flushing flow requirements. As explained above in Potential Impact 3.2-4, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a considerable contribution to short-term increases in suspended sediments.

However, the combined effect of the Proposed Project and the other restoration, flow enhancement, and water quality improvement projects would be beneficial for water quality, especially for water temperature and chlorophyll-a and algal toxins. The restoration, flow enhancement, and water quality improvement projects would increase the amount of cold water flowing in the river improving water temperature conditions for salmonids, while the Proposed Project would improve water temperature by returning more natural seasonal and daily variations. In combination with restoration, flow enhancement, and water quality improvement projects, the Proposed Project would help to offset the effects of climate change on late summer/fall water temperatures. Increases in river flows from restoration, flow enhancement, and water quality improvement projects would also be beneficial for water quality by diluting chlorophyll-a and algal toxins concentrations, while the Proposed Project would decrease high seasonal chlorophyll-a concentrations and periodically high algal toxin concentrations. The long-term cumulative benefits of the Proposed Project, as well as the water quality benefits described in the water quality section above, support the State Water Board's approval of the Proposed Project despite the considerable contribution to cumulative impacts related to short-term increases in suspended sediments.

Potential Impact 3.24-4

As indicated above, the short-term cumulative increase in SSCs from a late-season wildfire followed by heavy rains would not be likely to increase the magnitude of SSCs outside the range modeled for the Proposed Project. However, the short-term impact is conservatively assessed as cumulatively considerable given that the Proposed Project exceeds significance criteria for SSCs, and because of the potential for an extended duration of elevated SSCs in the Hydroelectric Reach, the Middle and Lower Klamath River, and the Klamath River Estuary from the combination of the Proposed Project and wildfires. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a considerable contribution to short-term water quality effects in combination with wildfires.

However, in addition to the water quality and cumulative benefits described above, the Proposed Project would also reduce the incidence of fish disease in juvenile salmon,

restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the considerable contribution to cumulative impacts related to short-term water quality effects.

Potential Impact 3.24-33

As indicated above, if these burning activities associated with wildlife management activities temporally overlap the Proposed Project construction period and produce substantial quantities of smoke near the Area of Analysis for air quality, they would result in significant and adverse emissions of NOx within the air quality Area of Analysis. As explained above, mitigation/avoidance of this impact is not feasible. Approval of the Proposed Project thus would result in a considerable contribution to short-term increases in NOx in combination with forest and wildfire management projects.

However, in addition to the cumulative benefits described above, the Proposed Project would have the following beneficial effects: the Project would significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. In addition, the Project would result in long-term beneficial effects to terrestrial resources. Some of those benefits include, increased wildlife movement opportunities, and increased distribution of riparian habitat, which, in turn, would lead to beneficial effects on willow flycatcher (*Empidonax trail/ii*), a species listed as threatened under the California Endangered Species Act. The environmental benefits of the Proposed Project support the State Water Board's approval of the Proposed Project despite the considerable contribution to cumulative impacts related to short-term increases in NOx emissions.

Potential Impact 3.24-64

As described above, the Proposed Project will result in a long-term reduction in reservoir storage that can be used for fighting wildland fires. While the proposed Fire Management Plan would identify a long-term replacement source that would avoid the impact, the State Water Board cannot ensure implementation of the Fire Management Plan and so the impact is considered significant and unavoidable.

The broad, environmental benefits of the Proposed Project include that it would: significantly improve Klamath River water temperatures and DO conditions, reduce algal toxins, reduce the incidence of fish disease in juvenile salmon, restore historical anadromous fish habitat, and eliminate fish passage barriers. The long-term benefits of the Proposed Project support the State Water Board's approval of the

Proposed Project despite the long-term significant and unavoidable impact of reduced access to fire-fighting water.

Conclusions

The State Water Board recognizes that the Proposed Project may result in unavoidable cumulatively considerable impacts, as described above. The State Water Board finds that these impacts are outweighed by the broad environmental benefits of the Proposed Project.

Additionally, achievement of each prong of the Proposed Project's underlying purpose, as well as each of the objectives of the proposed project (with the associated environmental, social and economic benefits) is sufficient overriding consideration by itself to warrant approval of the proposed project.

Summary of Conclusions

As set forth above, based on the EIR and the record, the State Water Board finds that each potentially significant impact of the Proposed Project has either been mitigated to less than significant or is unavoidable. As also set forth above, based on the EIR and the record, the State Water Board finds that the extensive environmental, benefits of the Proposed Project, with their related social and economic benefits, support the State Water Board's approval of the Proposed Project despite the significant and unavoidable impacts that could result from approval. Finally, based on the EIR and the record, the State Water Board finds that in light of the benefits of the Proposed Project the significant and unavoidable impacts are, on both an individual and a collective basis, acceptable consequences of project approval.