



RECORD OF DECISION

CORPS FILE NO. (ACTION ID): SPN-2003-279850

APPLICANT: Klamath River Renewal Corporation

PROJECT NAME: Lower Klamath River Dam Removal (Lower Klamath Project)

This is the United States Army Corps of Engineers' (Corps) Record of Decision (ROD) concerning Klamath River Renewal Corporation's (KRRC or applicant) application for a Department of the Army (DA) permit to discharge fill material into waters of the United States (waters of the U.S.) pursuant to Section 404 of the Clean Water Act (CWA) associated with the Lower Klamath Dam Removal Project. I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning the permit application for the proposed action, as well as the stated views of interested agencies and the public. In doing so, I have considered the possible consequences of the proposed action in accordance with regulations published in 33 Code of Federal Regulations (C.F.R.) Parts 320 through 332 and 40 C.F.R. Part 230.

As described in the Final Environmental Impact Statement (EIS), published in the Federal Register on September 2, 2022, and in the FERC docket on August 26, 2022, and as further described in the Department of the Army (DA) permit application materials, the proposed action involves the temporary discharge of dredged or fill material into approximately 20 acres of Other Waters of the United States (Klamath River) under Section 404 of the Clean Water Act (CWA). As such a Department of the Army (DA) permit under the Regulatory Program is required for the proposed action.

The Klamath River Renewal Corporation (KRRC) and PacifiCorp propose to create a free-flowing river to allow volitional fish passage, by decommissioning 4 dam facilities within the hydroelectric reach of the mainstem Klamath River, including the J.C. Boyle Dam and Powerhouse, Copco No. 1 Dam and Powerhouse, Copco No. 2 Dam and Powerhouse, and Iron Gate Dam and Powerhouse, as well as associated features. Associated features vary by development, but generally include powerhouse intake structures, embankments and sidewalls, penstocks and supports, decks, piers, gatehouses, fish ladders and holding facilities, pipes and pipe cradles, spillway gates and structures, diversion control structures, aprons, sills, tailrace channels, footbridges, powerhouse equipment, distribution lines, transmission lines, switchyards, historic cofferdams, portions of the Iron Gate Fish Hatchery, residential facilities, and warehouses. Facility removal would be completed within an approximately 20-month period. In addition, the Fall Creek Hatchery and the City of Yreka water supply pipeline would be modified. While most of the construction work would occur within the hydroelectric reach, some would take place outside the project boundary. Specific instances of work to be performed outside the project boundary include: (1) road surface improvements prior to, during, and after construction (Copco Road, Ager-Beswick Road, and Daggett Road); (2) bridge strengthening to

increase load-bearing capacity due to anticipated construction vehicle loads (Copco Road bridge over Fall Creek and Copco Road bridge over Dry Creek); (3) adaptive management activities at needed locations.

The proposed project's primary activities to be performed through in-water work include dam and ancillary structure removal, temporary work pad and access road construction, temporary and permanent road/culvert/bridge upgrades, assisted sediment evacuation within the mainstem of the Klamath River and high-priority tributaries, restoration in the former inundated reservoir areas, Klamath River tributary reconnection, City of Yreka water supply line construction, Fall Creek Hatchery modifications, construction of boat ramps at new permanent recreation sites, and adaptive management related to restoration. To access the dams for deconstruction, the KRRC would perform a controlled reservoir drawdown using both existing and modified infrastructure. Removal of the project facilities would require 20 months, followed by at least 5 years of restoration and monitoring activities. See Section 2.1 of the EIS for a detailed description of all proposed construction activities.

KRRC also proposes to implement 16 management plans that specify the sequence of procedures that would be used to draw down the four reservoirs; remove the dams and associated facilities; restore lands currently occupied by the dams, reservoirs, and other facilities; improve access for salmon to historical and existing habitat; and minimize adverse effects on environmental resources. A list of these plans, many of which include multiple subplans, is provided in Table ES-1.16 of the EIS. Section 2.1.2 of the EIS describes in details of the 16 management plans included in the project.

I. Background

The Federal Energy Regulatory Commission (FERC) is the lead federal agency for the Lower Klamath Dam Removal. Accordingly, FERC is the federal lead for compliance with the National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321 et seq.) (NEPA). This designation was formalized through a Memorandum of Understanding (MOU) between the Army Corps of Engineers (Corps) and the FERC effective June 23, 2021. Under the MOU, the Corps was assigned the role of cooperating agency.

PacifiCorp filed an application to relicense the Klamath Hydroelectric Project on February 25, 2004. In November 2007, FERC staff published an EIS for the license application, analyzing various alternatives, including decommissioning and removing the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate Developments, but ultimately recommended issuing a new license that included these developments with staff-recommended mitigation and resource agency mandatory conditions. However, PacifiCorp determined that implementing those conditions, to include complying with mandatory fishway prescriptions would mean operating the project at a net loss. Thereafter, PacifiCorp entered into negotiations with several resource agencies, Tribes, and other entities to evaluate alternatives to project relicensing.

In February 2010, PacifiCorp and 47 other parties, including the States of Oregon and California and the U.S. Department of the Interior (DOI), executed the Klamath Hydroelectric Settlement Agreement (KHSA), which provided for decommissioning and removing the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate Developments, contingent on the passage of federal legislation and approval by the Secretary of the Interior. However, the necessary legislation was never passed.

On April 6, 2016, PacifiCorp, the States of Oregon and California, DOI, U.S. Department of Commerce's National Marine Fisheries Service (NMFS), the Yurok Tribe of the Yurok Reservation, California (Yurok Tribe), the Karuk Tribe, and other entities signed the amended KHSA. On May 6, 2016, PacifiCorp filed the amended KHSA with the FERC. On June 16, 2016, the Commission stayed the relicensing proceeding for the Klamath Hydroelectric Project No. 2082.

On September 23, 2016, PacifiCorp and the KRRC filed an amendment and transfer application with the Commission to: (1) amend the Klamath Hydroelectric Project No. 2082 license to administratively remove the four developments to be decommissioned and place those developments into a new license that would become the Lower Klamath Project; and (2) transfer the license for the Lower Klamath Project from PacifiCorp to KRRC. On the same day, KRRC filed the original application to surrender the Lower Klamath Project license and remove the four developments. On March 15, 2018, the Commission approved the proposed amendment to administratively separate the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate Developments and create the Lower Klamath Project. On July 16, 2020, the Commission approved a partial transfer of the license for the Lower Klamath Project to KRRC, contingent on PacifiCorp remaining on as a co-licensee.

On August 4, 2020, KRRC submitted a complete application for a DA standard individual permit under Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the U.S. The Corps requested additional information from the applicant on February 2, 2022, regarding the placement of fill in Waters of the U.S and practicable alternatives to the proposed activities. On February 17, 2022, the applicant submitted the requested additional information regarding practicability of alternatives in light of the overall project purpose. The application's proposed fill is consistent with the Proposed Action (Alternative 2 in the EIS) as well as the Proposed Action with FERC Staff Modifications (Alternative 3 in the EIS). The Corps issued a public notice for scoping on June 7, 2021.

On November 17, 2020, the KRRC and PacifiCorp filed an amended application for surrender of license and removal of project works for the Lower Klamath Project with the FERC. The filing informed the FERC that KRRC and PacifiCorp did not accept co-licensee status, as approved by FERC's July 16, 2020, order, and would be filing a new transfer application by January 16, 2021. A new application to transfer the Lower Klamath Project from PacifiCorp to KRRC, the State of Oregon, and the State of California as co-licensees was filed on January 13, 2021, and approved by the FERC on June 17, 2021, under P 14803-004.

On December 16, 2020, the FERC issued a notice of application for surrender of license, soliciting comments, motions to intervene, and protests. On June 17, 2021, the FERC issued a notice of intent to prepare an EIS for the proposed Lower Klamath Project surrender and removal, request for comments on environmental issues, schedule for environmental review, and notice of public virtual scoping sessions. The FERC issued a scoping document on the same day and conducted virtual scoping sessions on July 20, 21, and 22, 2021.

The FERC, as lead federal agency for compliance with the National Environmental Policy Act (NEPA), notified the Corps that an EIS would be prepared on June 17, 2021. The Corps requested to be a cooperating agency in the environmental review process. The FERC granted the request. The FERC and the Corps executed a MOU effective June 23, 2021, establishing the FERC's role as federal lead and the Corps' role as cooperating agency under NEPA. One other federal agency (U.S. Environmental Protection Agency (EPA)) and one tribal entity (Yurok Tribe) were cooperating agencies in the development of the EIS.

On February 25, 2022, a Draft Environmental Impact Statement (DEIS) was issued by the FERC for a 90-day review period with comments to be due on April 18, 2022. A Notice of Availability was published in the Federal Register (87 Fed. Reg. 12445-01) on March 4, 2022. On April 18, 2022, the FERC noticed extending the comment period to April 25, 2022, due to technical difficulties.

Comments on the Draft EIS were considered by the FERC in the EIS, and comments on the Corps' public notice were fully considered in preparing the EIS and this ROD, respectively (see Section VII of this ROD).

As a result of comments received during the DEIS comment period, modifications were made by FERC to the Proposed Action with FERC Staff Modifications alternative between the application submittal and the publication of the Final EIS to further minimize environmental impacts. While these modifications minimized environmental impacts, they did not alter the project or its fill in such a way as to require an updated project description.

The FERC published a Final EIS on August 26, 2022. A Notice of Availability was published in the Federal Register on September 2, 2022 (87 Fed. Reg. 53743-01).

II. Existing Environment

The Klamath River from the JC Boyle reservoir to Iron Gate Dam is a predominantly non-alluvial, sediment supply-limited river flowing through mountainous terrain. Downstream from Iron Gate Dam, and for most of the river's length to the Pacific Ocean, the river maintains a relatively steep, high-energy, coarse-grained channel, much of it confined by bedrock. The course of the river in the Klamath hydroelectric reach is largely bedrock-controlled, interspersed with short alluvial reaches. Therefore, the influence of the four hydropower facilities on river geomorphology within the project area and downstream is limited; floodplain development is minimal; and wider valleys allowing alluvial channel migration processes are rare. The mouth of

the river is characterized by a wave-dominated delta with a large offshore sand bar parallel to the coastline that contains a shallow lagoon about 2,500 feet long by less than 1,000 feet wide. This area of the river is highly dynamic, changing positions during large flood events and transporting most of its fine-grained (silt/clay) suspended sediment load out to sea. Deposits in the lagoon are dominated by medium and silty sand. See Section 3.0 of the EIS for a detailed description of the Klamath watershed.

III. Project Purpose and Need

a. NEPA Purpose and Need

As the federal lead for NEPA, the FERC identified the purpose and need for the proposed action, which is located in Section 1.3 (pp. 1-6 to 1-7) of the EIS. FERC identified the purpose of the project as to decide whether to approve the licensee's application to surrender the license for and decommission the Lower Klamath Project and decide what conditions should be included in any surrender order issued. Further, FERC determined that the need of the project was for the timely improvement of water quality and to address systemwide limiting factors including a lack of fish passage, high summer and fall water temperatures, blue-green algae blooms, disease incidence, impaired sediment supply and transport. As detailed in the EIS, the FERC's orders under the Federal Power Act serve the purpose of power and development, as well as a broad range of public interest factors including the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Additional objectives of the project include:

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

b. 404 (b)(1) Basic and Overall Project Purpose

For activities requiring a permit under Section 404 of the CWA, the Corps identifies a basic and overall project purpose for compliance with the USEPA's Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (Corps' SOP and Section 404(b)(1) Guidelines; 40 C.F.R. § 230.10(a)). As explained in more detail below, the basic purpose helps

determine whether a project is water dependent. For activities that would result in the discharge of dredged and/or fill material into special aquatic sites (i.e. sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle and pool complexes), the basic project purpose is used to identify whether the activity is water dependent (i.e. requires access or proximity to or sighting within the special aquatic site in question to fulfill its basic purpose (40 C.F.R. § 230.10(a)(3)). In this case, the proposed action would not result in the discharge of dredged or fill material into special aquatic sites, and therefore identification by the Corps of a basic project purpose is not necessary. However, the Corps is still required to determine an overall purpose for the project by which to evaluate all practicable alternatives. The overall project purpose is used to evaluate whether there are less environmentally damaging practicable alternatives (Corps SOP and 40 C.F.R. § 230.10(a)). The Corps has identified the overall project purpose as to remove dam associated infrastructure along approximately 41 miles of mainstem Klamath River to restore volitional fish passage.

IV. Scope of Analysis

a. NEPA Scope of Analysis

Per 33 C.F.R. pt. 325, Appendix B, paragraph 7, the scope of analysis under NEPA extends to those areas where the Corps is considered to have control and responsibility for portions of a project beyond the limits of Corps' jurisdiction where the Federal involvement is sufficient to turn an essentially private action into a federal action. Because of the extent of cumulative federal control and responsibility for this project, the NEPA scope of analysis includes the entire Klamath River watershed, from the upstream extent of Keno Dam to the mouth of the mainstem Klamath River where it meets the Pacific Ocean and including all tributaries with a direct connection to the mainstem river. The EIS established specific scopes of analysis for each potentially affected resource type as found on the following pages: Geology and Soils, page 3-2; Water Quantity, page 3-32; Water Quality, page 3-62; Aquatic Resources, page 3-187; Terrestrial Resources, page 3-285; Threatened and Endangered Species, 3-359; Recreation, page 3-415; Land Use, page 3-445; Aesthetics, page 3-461; Cultural resources, page 3-467; Socioeconomics, page 3-511; Environmental Justice, pages 3-538-3539; Public Safety, page 3-561; and Air Quality and Noise, page 3-564.

b. Public Interest Review Scope of Analysis

In accordance with 33 C.F.R. § 320.4(a)(1), the decision whether to issue a permit must be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. The proposed activity is the activity requiring a DA permit, which is the discharge of dredged and/or fill material into waters of the U.S. subject to Section 404 of the CWA, as well as any required compensatory mitigation required to offset the loss of waters of the U.S. associated with the proposed discharge.

Under Section 404 of the CWA, activities that would result in a discharge of dredged/fill material into waters of the U.S. require a permit. The proposed action would entail the temporary discharge of 15.5 million cubic yards of reservoir sediment (fill) within 20 acres of Other Waters of the U.S. (Klamath River). The proposed action would result in permanent impacts to jurisdictional waters which include but are not limited to, removal of dam embankments and associated structures, placement of fill within powerhouses and tailraces, placement of boulders in the mainstem Klamath River for channel roughness, placement of erosion and protection at the dam sites, removal of reservoir sediments, installation of boat ramps, and bridge installation. Temporary impacts to jurisdictional waters include construction of access roads and work pads to facilitate dam removal, installation of temporary bridges, changes in water quality, and increases in turbidity. The Proposed Action is at its core a restoration project to reestablish the natural river functions and processes, including those of wetland and riparian habitat.

As the proposed action is implemented, the exposed reservoir areas would be restored and stabilized to ensure water quality and ecological benefits. As the Klamath River re-establishes its historic channel, off-channel wetlands, floodplain terrace wetlands, and riparian fringe wetlands and habitats are expected to reform naturally along both the mainstem of the Klamath River and along tributaries to the Klamath River that are currently inundated by the reservoirs. The Project would restore approximately 10.1 acres of wetlands and 65.8 acres of riparian habitat at J.C. Boyle reservoir area, 18.9 acres of wetlands and 96.0 acres of riparian habitat at Copco No. 1 reservoir area, and approximately 18.8 acres of wetlands and 47.7 acres of riparian habitat at the Iron Gate reservoir area. Additionally, there would be no loss of waters from the discharge of fill material. Therefore, the project is considered to be self-mitigating and does not require compensatory mitigation.

The proposed action would restore the mainstem Klamath River from its existing condition including four reservoirs, to a free flowing, unimpeded riverine system. Removal of the four dams would impact all areas downstream of the project, as reservoir sediments would be mobilized throughout the system. Therefore, the scope of analysis for the Public Interest Review was determined to be located from the upstream extent of the hydroelectric reach to the mouth of the mainstem Klamath River where it meets the Pacific Ocean and including all tributaries with a direct connection to the mainstem river where restoration and adaptive management activities may occur.

c. Section 404(b)(1) Scope of Analysis

The Section 404(b)(1) Guidelines provide a number of restrictions for the discharge of dredged and/or fill material into waters of the U.S. (40 C.F.R. § 230.10). One of these restrictions on discharge is that no discharge of dredged or fill material shall be permitted which would cause or contribute to significant degradation of waters of the U.S. (40 C.F.R. § 230.10(c)). The findings of significant degradation are based upon factual determinations, evaluations, and tests required by Subparts B and G of the 404(b)(1) Guidelines, after consideration of subparts C through F (40 C.F.R. § 230.10(c)). The factual determinations are based on an evaluation of the direct,

secondary, and cumulative effects of the proposed discharge on the aquatic ecosystem. Secondary effects are defined in 40 C.F.R. § 230.11(h), as effects on an aquatic ecosystem that are associated with a discharge of dredged or fill material, but do not result from the actual placement of the dredged or fill material. The proposed action would result in the discharge of fill material into waters of the U.S. from release of reservoir sediments during the dewatering of reservoirs, construction of temporary gravel pads during dismantling of dam and ancillary structures, placement of temporary coffer dams, placement of temporary fill for road and road crossing improvements, and placement of fill for restoration and adaptive management activities needed to restore tributary connections.

Unlike the NEPA scope of analysis, the Corps' scope of analysis under the 404(b)(1) Guidelines extends only to those direct, secondary, and cumulative effects associated with the discharge of fill material into waters of the U.S., including direct, secondary, and cumulative effects to surface water quantity and quality. Therefore, the Section 404(b)(1) scope of analysis would extend from the upstream extent of the hydroelectric reach to the mouth of the mainstem Klamath River where it meets the Pacific Ocean and where discharged sediments would enter the Ocean. See also Section VII of this ROD for additional discussion.

d. Section 7 Endangered Species Act Scope of Analysis

Under the provisions of 50 C.F.R. § 402.02, the term action area is defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” Accordingly, the action area typically includes the affected jurisdictional waters and uplands affected by the authorized work or structures within a reasonable distance. The ESA regulations recognize that in some circumstances the Corps’ scope of analysis may be expanded beyond the limits of the Corps’ regulatory jurisdiction to address upland portions of a larger project. As a general rule, the Corps extends its scope of analysis beyond the jurisdictional waters where the environmental consequences of a larger project may be considered the products of either the Corps permit action, or the Corps permit action in conjunction with other federal involvement. The Corps has defined the scope of analysis to include the upstream extent of the hydroelectric reach to the mouth of the mainstem Klamath River where it meets the Pacific Ocean and where discharged sediments would enter the Ocean.

As stated in the December 17, 2021, National Marine Fisheries Service Biological Opinion (BO), and the December 22, 2021, U.S. Fish and Wildlife Service (USFWS) BO, the scope of analysis for the project consisted of the geographic extent anticipated for potential effects of the removal activities and the resulting free-flowing river condition on all evaluated listed species. Effects in the action area vary because the population distribution and the specific effects may vary among species. A diagram of the Action area can be found on page 92 of the NMFS Biological Opinion titled “Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Surrender

and Decommissioning of the Lower Klamath Hydroelectric Project No. 14803-001, Klamath County, Oregon and Siskiyou County, California,” and on page 26 of the USFWS BO titled “Biological Opinion Lower Klamath Project 08EYRE00-2021-F-0127 Federal Energy Regulatory Commission, California.”

The NMFS BO went on to define the action area further as: Upper Klamath Lake and its fish-bearing tributaries, up to the limit of anadromy; the Klamath River from Upper Klamath Lake downstream to the mouth of the Klamath River estuary; and all fish-bearing tributaries of the Klamath River upstream of Iron Gate Dam, up to the limit of anadromy. The anticipated limits of anadromy are based on current watershed conditions and include the following: the area within 1.5 miles of the overall project construction limits in the Hydroelectric Reach (four developments and their reservoirs), which contains the four dams proposed for removal and encompasses the extent of fish passage actions on the main tributaries as well as the entire construction footprint; and the 100-year floodplain from Link River Dam to the mouth of the Klamath River.

The USFWS BO went on to define the action area further as: Upper Klamath Lake and its fish-bearing tributaries, up to the limit of anadromy as defined by ODFW (2020) which includes the area expected to be recolonized by Chinook salmon and steelhead after implementation of the proposed action; the Klamath River from Upper Klamath Lake downstream to the mouth of the Klamath River estuary; all fish-bearing tributaries of the Klamath River upstream of Iron Gate Dam, up to the limit of anadromy (for those tributaries in Oregon, the limit of anadromy is defined by ODFW (2020)); the area within 1.5 miles of the project’s construction limits in the hydroelectric reach, which contains the four dams and reservoirs to be removed and encompasses the extent of fish passage actions on the main tributaries as well as the entire construction footprint; the 100-year floodplain from the Link River Dam to the mouth of the Klamath River; the Tule Lake National Wildlife Refuge, including Tule Sump 1A and Sump 1B to account for the effects of translocated suckers or any existing suckers in these locations. Suckers translocated to the Tule Lake National Wildlife Refuge would be subject to protections under existing and future ESA consultations on the Klamath Project operations; and the Klamath Falls National Fish Hatchery near Klamath Falls, Oregon and the Klamath Tribes’ sucker rearing facility near Chiloquin, Oregon to account for translocation. As required by the USFWS BO, once the captured suckers arrive at these facilities, any injury, harm, or death would be covered by existing permits to operate these facilities.

As such, the action area as defined by the Corps is the same as the action areas defined by the Services, and the resultant BOs provide ESA coverage for the entire project.

e. Section 106 Scope of Analysis

In accordance with 36 C.F.R. pt. 800, the implementing regulations for Section 106 of the National Historic Preservation Act, as amended (54 U.S.C. § 306108) and Appendix C of 33 C.F.R. pt. 325, the implementing procedures for the Clean Water Act, as amended (33 U.S.C. §

1344, 33 U.S.C. § 401), we have analyzed the effects of issuing a permit (undertaking) on cultural resources within the Area of Potential Effects (APE). The Corps has determined that the undertaking's Area of Potential Effects (APE) is the same as the jurisdictional permit area and includes the upstream extent of the hydroelectric reach to the mouth of the mainstem Klamath River where it meets the Pacific Ocean.

V. Project Location

The Lower Klamath Project is located on the Klamath River in Klamath County in south-central Oregon, and in Siskiyou County in north-central California. It occupies 395.09 acres of federal lands. These federal lands are administered by the DOI's Bureau of Land Management (BLM). The project consists of four developments (J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate) known as the hydroelectric reach that the licensees propose to surrender and decommission.

The Regulatory boundary between the San Francisco District (SPN) and the Portland District (NWP) is the California-Oregon state line, which divides the Klamath River Basin. Iron Gate, Copco No.1, and Copco No.2 dams are located in California within the Regulatory boundary for SPN, while the remaining J.C. Boyle Dam and associated structures are located in Oregon within the Regulatory boundary of NWP. By Memorandum of Understanding (MOU), dated January 28, 2021, SPN was designated as the Lead District for all Regulatory Actions for the Lower Klamath Project.

VI. Alternatives Considered

The EIS contains sufficient evaluation of the direct, indirect, and cumulative effects of the proposed action under NEPA.

The Corps requested additional information from the applicant on February 2, 2022, regarding the placement of fill in Waters of the U.S and practicable alternatives to the proposed activities. On February 17, 2022, the applicant submitted the requested additional information regarding practicability of alternatives in light of the overall project purpose, which, in conjunction with the analysis of alternatives in Chapter 2 of the EIS, is being utilized in this Record of Decision (ROD) to conduct the alternatives analysis required for compliance with the Clean Water Act Section 404(b)(1) Guidelines (404(b)(1) Guidelines).

A reasonable range of alternatives was considered in the EIS for the proposed project. The EIS also identified those alternatives that were considered but rejected from further analysis. The alternatives were further modified in response to comments received on the EIS from the public, agencies, and nongovernmental organizations. In the EIS, each alternative was evaluated to determine whether the alternative was reasonable or feasible from a technical, economic, and logistical standpoint. The alternatives evaluation is described in detail in Chapter 2 of the EIS. See Appendix A of the EIS (Alternatives, Information, and Analyses submitted during scoping) for a complete description of the analyses regarding other alternatives not described below.

a. Alternative 1 (No Action Alternative): This alternative involves leaving the Lower Klamath Project in place. During the short term, the Lower Klamath Project would continue to operate under an annual license until the disposition of the Lower Klamath Project could be determined through the FERC relicensing process. The No Action alternative does not meet the project purpose because it would not provide volitional fish passage on the mainstem Klamath River and would not improve water quality to address system-wide limiting factors including a lack of fish passage, high summer and fall water temperatures, blue-green algae blooms, disease incidence, impaired sediment supply and transport.

b. Alternative 2 (Proposed Action): This alternative involves removal of Lower Klamath Project facilities at all four dam complexes to the extent sufficient to allow a free-flowing river. The Proposed Action includes the deconstruction of the J.C. Boyle Dam and Powerhouse, Copco No. 1 Dam and Powerhouse, Copco No. 2 Dam and Powerhouse, and Iron Gate Dam and Powerhouse, as well as associated features. Associated features vary by development but generally include powerhouse intake structures, embankments, sidewalls, penstocks and supports, decks, piers, gatehouses, fish ladders and holding facilities, pipes and pipe cradles, spillway gates and structures, diversion control structures, aprons, sills, tailrace channels, footbridges, powerhouse equipment, distribution lines, transmission lines, switchyards, original cofferdams, portions of the Iron Gate Fish Hatchery, residential facilities, and warehouses. This alternative would therefore meet the underlying purpose. This alternative would be technically, logistically, and economically feasible to construct. It would provide volitional fish passage and improve instream conditions of the Klamath River. This alternative meets the overall project purpose. Therefore, this Alternative has been determined to be practicable.

c. Alternative 3 (Proposed Action with FERC Staff Modifications): Under Alternative 3, the Proposed Action with FERC Staff Modifications, the project would be decommissioned as proposed under Alternative 2, with the inclusion of all proposed FERC staff mitigation measures, as outlined on pages 2-71 to 2-73 of the EIS. In addition, the project would include the conditions from the 401 Water Quality Certifications (WQCs) issued by the California Water Board and Oregon Department of Environmental Quality (Oregon DEQ) and the BOs issued by the NMFS and FWS and additional recommendations outlined on pages 2-55 to 2-71 in the EIS. This alternative would be technically, logistically, and economically feasible to construct. It would provide volitional fish passage and improve instream conditions of the Klamath River. This alternative meets the overall project purpose. Therefore, this Alternative has been determined to be practicable.

d. Determination of Practicable Alternatives: We have determined that Alternative 1 would not meet the overall project purpose. We have determined that Alternatives 2 and 3 would meet the overall project purpose and are practicable. Other alternatives submitted included options for retaining one or more of the reservoirs with or without implementing various approaches to achieve fish passage; removing the reservoirs sequentially; conducting experimental drawdowns to verify anticipated environmental benefits; altering the operation of the reservoirs to improve flood control or achieve environmental benefits; and implementing

alternative methods for achieving water quality objectives including releasing cooler water from other storage facilities, developing additional water storage facilities, reducing predator abundance or restricting commercial fishing, and building more fish hatcheries. These alternatives were evaluated, and it was determined that many of these approaches would cause additional environmental effects or would face substantial technological, logistic, or regulatory obstacles. We also found that none of these alternatives would meet the need to address the factors that are affecting the Klamath River salmon runs in a timely enough manner to reduce the risk of their extinction. The EIS provides an evaluation of the submitted alternatives in Appendix A, which also includes a summary of information and analyses submitted during scoping.

e. Alternative(s) Considered to be Environmentally Preferable: The practicable alternative considered to be environmentally preferable is Alternative 3, Proposed Action with FERC Staff Modifications. Although Alternative 2 (Proposed Action) would meet the overall project purpose and is practicable, that alternative would have greater impacts to the aquatic environment or other significant adverse environmental impacts to the Klamath watershed.

VII. Public Involvement

a. Comments on the EIS

The public provided robust comments on the EIS to FERC, the lead federal agency. The Corps provided input, where appropriate, to fulfill their role as a cooperating agency in the development of the EIS. In a letter dated April 18, 2022, the EPA, another cooperating agency, submitted comments on the DEIS regarding the need to amend the Reservoir Area Management Plan (RAMP) to identify desired or priority plant species that would be conducive to the creation of additional wetland or riparian habitat and identify associated success criteria. Additionally, the EPA recommended that adaptive management measures be tailored to meet these criteria and promote establishment of those identified species which would restore or replace wetland or riparian function and values. The KRRC responded by modifying the RAMP to include two periods of vegetation sampling each year. The second sampling period would inform adaptive management measures and would be implemented in consultation with the States of Oregon and California. The EIS goes on to state that in addition, the Habitat Restoration Group (as established by the RAMP) would allow for agency oversight on means and methods for successful re-establishment of priority plant species. See Section 6.3 of the EIS for a detailed description of proposed adaptive management activities proposed for plant species.

See Section 1.4.1 of the EIS for a summary of comments received on the DEIS. The public comments on the DEIS and the FERCs responses are documented in Appendix L of the EIS. Appendix A, Section A.2 of the EIS provides a detailed description of information submitted to FERC during the scoping process and how this information was incorporated in the EIS.

b. Public Notice Comments

On June 7, 2021, SPN and NWP issued a joint public notice announcing the receipt of a complete DA permit application requesting DA authorization to discharge dredged and/or fill material into waters of the United States associated with the Lower Klamath Project and requested comments from interested parties by July 8, 2021. A total of 21 letters or emails were received. The comments provided information or expressed concerns with, or opposition to, the proposed action. Of the 21 letters received, two commentors requested a public hearing.

One commentor who requested a public hearing raised concerns related to loss of local employment opportunities, potential impacts to traffic patterns, potential impacts to homeowners living on Copco Lake, changes in water storage, consideration of alternatives, loss of recreational opportunities, loss of reservoir habitats, and compliance with other federal laws. The comments were identical to comments submitted to FERC as part of the scoping and comment period of the EIS. FERC provided a response to these comments in the EIS.

The other commentor who requested a public hearing raised concerns regarding the assertion that the KRRC had not presented accurate and complete information in regard to large geologic structures documented to exist underwater just behind Copco 1 dam. The same comments were provided to FERC as part of the EIS scoping and comment period. FERC provided a response to this comment in the EIS, including supporting documentation that the structure was likely no longer present in its former location and therefore would not pose an issue to the project.

The Corps determined that the above comments were to be sufficiently addressed in the EIS, and that the comments did not raise issues related to the 404 permit process. Therefore, the District Engineer determined that no valid interest would be served by a hearing and notified the two commentors of this decision via letters dated December 8, 2021. No responses were received to this letter.

By electronic correspondence dated November 29, 2021, the Corps provided the applicant with the public comments it received on the proposed action. The majority of the comments received were in opposition of the project, however, did not pertain to Section 404 of the Clean Water Act or the placement of dredge or fill material into jurisdictional waters. The remaining issues raised by the commentors were either identical to or substantively the same as those submitted to FERC and therefore have been addressed in the EIS. Therefore, the Corps did not develop an additional response to these comments.

VIII. Consideration of Applicable Laws, Regulations, Executive Orders and Policies

a. National Environmental Policy Act (NEPA)

The Corps was a cooperating agency in the preparation and coordination of the project's Draft EIS (February 2022) and Final EIS (September 2022).

The Corps has conducted an independent review of FERC's EIS to determine its overall sufficiency in complying with the Corps' NEPA implementing regulations (33 C.F.R. pt. 325 Appendix B), as well as other applicable statutory requirements, including, but not limited to Section 7 of the Endangered Species Act (ESA), Section 106 of the National Historic Preservation Act, Section 302(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act, and Section 176(c) of the Clean Air Act. The EIS was completed to evaluate a reasonable range of alternatives and assess the direct, indirect, and cumulative effects associated with a reasonable range of alternatives. The FERC, with the assistance of cooperating agencies, including the Corps, followed the NEPA process identified in 40 C.F.R. pts. 1500-1508, 33 C.F.R. pt. 230, and 33 C.F.R. pt. 325, Appendix B, including noticing and timeline requirements, to produce an EIS that discloses to the public the probable impacts of each alternative, taking into account mitigation. The FERC, as the lead federal agency, has fulfilled all applicable federal statutory requirements and addressed all Corps comments related to Corps jurisdiction by law and/or special expertise, with no outstanding unresolved issues. The Corps' evaluation of the EIS complies with all provisions of NEPA. The Corps has evaluated the FERC's EIS to ensure that the requirements of NEPA have been met. As the actions covered by the EIS and the proposed action requiring a DA permit are substantially the same, and the Corps' independent review of the EIS demonstrated that the Corps' comments and suggestions have been satisfied, the Corps is adopting the EIS to make a permit decision on the proposed action pursuant to 40 C.F.R. § 1506.3(b)(2).

b. Section 401 of the Clean Water Act (CWA)

The Corps' evaluation of the proposed action is in compliance with Section 401 of the CWA. Water Quality Certifications (WQC) from the California State Water Resources Control Board (CARWQCB) and the Oregon Department of Quality (DEQ) were granted in April 2020, and on September 7, 2018, respectively. The California WQC was amended on November 3, 2022, and a supplemental WQC from the DEQ was completed on September 2, 2022. Pursuant to 40 C.F.R. § 121.10, Special Conditions of the Section 401 WQCs that satisfy the requirements of 40 C.F.R. § 121.7(d) would be added as a Special Condition of the DA permit.

The WQCs were coordinated with the EPA for neighboring jurisdiction determination on October 28, 2021. On February 28, 2022, the EPA determined that the project is not likely to have an adverse effect on neighboring jurisdiction water quality, based on the location of the project and the amount of material discharged, and approved the Corps to proceed with the license or permit in accordance with 40 C.F.R. § 121.12.

c. Endangered Species Act of 1973 (ESA)

The Corps' evaluation of the proposed action is in compliance with Section 7 of ESA. The Corps designated the FERC as the Lead Federal agency for purposes of complying with Section 7 of the Endangered Species Act. Chapter 3, Section 3.6 of the EIS identifies the impacts of the proposed action on federally-listed threatened and/or endangered species within the project footprint.

The FERC requested formal consultation with the NMFS and USFWS in letters dated August 2, 2021. The FERC determined that the proposed action may affect and would likely adversely affect Southern Oregon/Northern California Coast (SONCC) (*Oncorhynchus kisutch*) coho salmon Evolutionarily Significant Unit (ESU), Southern Resident Killer Whale (SRKW) (*Orcinus orca*) Distinct Population Segment (DPS), and Southern DPS eulachon (*Thaleichthys pacificus*), and destroy or adversely modify designated critical habitat for the SONCC coho salmon ESU, SRKW, or Southern DPS eulachon. The FERC determined that the proposed action may affect, but not likely adversely affect Southern DPS Green Sturgeon (*Acipenser medirostris*). The FERC also determined that the proposed action would have an adverse effect on Pacific Coast Salmon species, Pacific Coast groundfish species, and Pacific Coast Pelagic species and requested EFH consultation.

The FERC determined that the proposed action may affect, and would adversely affect the Lost River sucker (*Deltistes luxatus*), shortnose sucker (*Chasmistes brevirostris*) and bull trout (*Salvelinus confluentus*) and that the proposed action may affect but is not likely to adversely affect the northern spotted owl (*Strix occidentalis caurina*) and its critical habitat, Franklin's bumble bee (*Bombus franklini*), Oregon spotted frog (*Rana pretiosa*), and critical habitat for the Lost River sucker, shortnose sucker and bull trout. The FERC further determined the proposed action would have no effect to critical habitat for the Oregon spotted frog.

On December 22, 2021, the USFWS, issued a Biological Opinion (BO) (USFWS # 08EYRE00-2021-F-0127) to FERC for proposed impacts to the Lost River sucker (*Deltistes luxatus*), shortnose sucker (*Chasmistes brevirostris*), bull trout (*Salvelinus confluentus*), the northern spotted owl (*Strix occidentalis caurina*) and its critical habitat, Franklin's bumble bee (*Bombus franklini*), Oregon spotted frog (*Rana pretiosa*), and critical habitat for the Lost River sucker, shortnose sucker and bull trout. The BO determined that the Proposed Action may affect and is likely to adversely affect the Lost River Sucker, shortnose sucker, and bull trout and that the Project may affect, but is not likely to adversely affect northern spotted owl, the Franklin's bumble bee, the Oregon spotted frog and critical habitat for the northern spotted owl, Lost River sucker, shortnose sucker, and bull trout. The BO includes an incidental take statement for the loss of Lost River and shortnose suckers, including three Reasonable and Prudent Measures, 12 Terms and Conditions, and three Conservation Recommendations, along with several reporting requirements. The BO also included conservation recommendations for the Pacific Lamprey (*Entosphenus tridentatus*) and freshwater mussels (*Gonidea* spp. *Margaritifera* spp. and

Anodonta spp.). Although not a federally listed species, USFWS recommended consideration of Pacific lamprey during permitted in-water work. Lamprey are a Tribal Trust species and have a high cultural significance to Native American tribes from California to Alaska. While no species of freshwater mussels are currently federally listed in the Pacific Northwest, they present a high cultural, ecological, and environmental value to many entities. The western ridged mussel (*Gonidea angulata*) was petitioned for listing by the Xerces Society on August 18, 2020, and the USFWS would be evaluating if this species warrants protection under the ESA over the next couple of years.

On December 17, 2021, the National Marine Fisheries Service (NMFS), issued a BO (NMFS WCRO-2021-01946) to FERC for proposed impacts to Southern Oregon/Northern California Coast (SONCC) coho salmon Evolutionarily Significant Unit (ESU), Southern Resident Killer Whale (SRKW) Distinct Population Segment (DPS), and Southern DPS eulachon, and critical habitat for the SONCC coho salmon ESU, SRKW, or Southern DPS eulachon. The BO concluded that the proposed project may affect and is likely to adversely affect SONCC coho salmon, and SRKW, and Southern DPS eulachon and would result in the incidental take of these species. The BO also concluded that the Project may affect but is not likely to adversely affect Southern DPS green sturgeon. The BO includes an incidental take statement for the loss of Lost River and shortnose suckers, including ten Reasonable and Prudent Measures, 19 Terms and Conditions, and three Conservation Recommendations.

The Corps determined that the species covered in the Biological Assessment (BA) provided by FERC to the Services were the same species as identified by the Corps as present within the action area. Additionally, the Corps effects analysis was the same as the effects analysis provided in the BA and that all proposed activities included in the Proposed Action of the BA were the same as those activities identified by the Corps. Therefore, the Corps was able to rely on the provided BA and subsequent BOs to complete their Section 7 requirements.

Consultation with the NMFS and the USFWS was initiated and completed as required. The Corps has reviewed the documentation provided by the agency and determined it is sufficient to confirm compliance for this permit authorization with the EFH provisions, and additional consultation is not necessary. Compliance with the BOs would be added as a Special Condition of any DA permit.

d. Fish and Wildlife Coordination Act (FWCA)

The Corps' evaluation of the proposed action is in compliance with the FWCA. Chapter 3, Section 4 of the EIS identifies the impacts of the proposed action on non-listed fish and wildlife species. No comments were received from the USFWS or any other federal agencies with fish and wildlife trust responsibilities.

e. Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)

The Corps' evaluation of the proposed project is in compliance with the MSFCMA. In the BO dated December 17, 2021, the NMFS provided an Essential Fish Habitat (EFH) assessment and concluded that the proposed project would have an adverse effect on EFH of Pacific Coast Salmon, Pacific Coast groundfish, and coastal pelagic EFH. The EFH assessment stated that although there are expected to be short term adverse effects associated with the proposed action, the quality of EFH would be enhanced over the long term, and the proposed action already contains a number of conservation/minimization measures. These measures, which are discussed in detail in Section 1.3.7 of the NMFS BO, include actions designed to minimize impacts to: (1) adult passage and spawning habitat (e.g., measures included in the Spawning Habitat Availability Report and Plan), (2) juvenile outmigration (e.g., aquatic resource measures), (3) water quality (e.g., as described in the Erosion and Sediment Control Plan), and (4) the restored reservoir footprints (e.g., the RAMP). These activities all include in-water work Best Management Practices (BMPs). These measures are designed to avoid or minimize short term adverse effects on aquatic species and habitat. Thus, NMFS provided no conservation recommendations.

f. Section 106 of the National Historic Preservation Act (NHPA)

The Corps' evaluation of the proposed action is in compliance with Section 106 of the NHPA. Chapter 3, Section 10 of the EIS identifies potential impacts of the proposed action on cultural resources.

The Corps designated FERC as the Lead Federal Agency for purposes of complying with Section 106 of the NHPA, including preliminary consultation with federally recognized Tribes. In its November 10, 2016, Notice of Applications Filed with the Commission, the FERC stated that it had designated KRRC as the non-federal representative for the purpose of informal Section 106 consultation. KRRC initiated consultation with the California and Oregon State Historic Preservation Offices (SHPOs) in an August 8, 2017, letter. In a letter to the Advisory Council on Historic Preservation (Advisory Council) dated April 5, 2022 (filed April 6, 2022), the California SHPO requested the Advisory Council's assistance in Section 106 consultation due to the project's complexity. By letter filed on May 3, 2022, the Advisory Council agreed to participate.

The FERC determined that the APE proposed by the licensees is defined as a 0.5-mile-wide area extending from the shoreline of each side of the Klamath River from the upper reach of J.C. Boyle Reservoir to the mouth of the Pacific Ocean. The FERC also determined that decommissioning and removing the Lower Klamath Project facilities could adversely affect cultural resources listed or eligible for inclusion in the National Register. Following this determination, as the non-federal representative for Section 106 compliance, the KRRC developed a Programmatic Agreement (PA) and a Historic Properties Management Plan (HPMP) that would provide for the management of effects on historic properties located within the APE for the project. See Section 3.10.3 of the EIS for a detailed description of effects to historic

properties. On September 22, 2022, the FERC, the Advisory Council and the CA and OR SHPOs, signed the PA to complete the Section 106 process. The Corps signed as a concurring party to the PA.

The Corps determined that the potential effects to historic properties and cultural resources within the Corps APE were the same as those effects discussed in the SHPO consultation initiated by the FERC. Therefore, the Corps was able to rely on the provided Section 106 consultation documents to complete their Section 106 requirements.

The Corps has reviewed the documentation provided by the agency and determined it is sufficient to confirm Section 106 compliance for this permit authorization, and additional consultation is not necessary. Compliance with the requirements of the PA would be added as a Special Condition of any DA permit.

g. Section 176(C) of the Clean Air Act (CAA) General Conformity Rule Review

The proposed action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The Corps has determined that direct emissions from the proposed activities that require a DA permit would not exceed de minimis levels of a criteria pollutant or its precursors and are exempted by 40 C.F.R. § 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For, these reasons a conformity determination is not required for this action.

h. Wild and Scenic Rivers Act (WSRA)

The proposed action has been analyzed for conformity applicability pursuant to Section 7(a) the Wild and Scenic Rivers Act (WSRA). Designated rivers are managed for 0.25-mile on each side of the river for their outstandingly remarkable values (ORVs).

Within the project, approximately 11 miles of the Klamath River from the J.C. Boyle Powerhouse to the California-Oregon border are designated as a National Scenic River under the Wild and Scenic Rivers Act. The ORVs identified for this stretch of the Klamath River are fisheries; historic uses; Native American traditional use; and recreation use, including whitewater boating, scenic landscape, and diverse wildlife and habitats. The segment of the mainstem river from Iron Gate Dam to the Pacific Ocean (approximately 250 miles) is designated as Recreational. The ORV identified for this river designation is fisheries; with the river supporting several species of anadromous salmon, resident trout, sturgeon, and Pacific lamprey (NWSRS, 2021b). Another 5.3-mile segment of the Klamath River that begins at the California-Oregon border and continues downstream to the Copco No. 1 Reservoir is considered eligible for designation. The ORVs for this segment are fisheries, historic uses, recreation use, scenic landscape, and wildlife resources.

The proposed project would result in short-term, significant, adverse effects on the scenic landscape, fisheries, and recreation ORVs for which the Scenic River reach as designated. In the long term, the project would provide permanent, significant, beneficial effects on the scenic landscape, fisheries, and recreation ORVs for which the Scenic River reach was designated. These effects would also occur in the segment below J.C. Boyle that is eligible but not designated as a Wild and Scenic River. Effects on the Recreational River segment would be similar to the Scenic River segment. Section 3.7.3.4 of the EIS further describes these effects.

In a preliminary determination made by the National Park Service, and dated April 11, 2022, it was determined that dam removal and associated restoration actions would result in long-term benefits to the scenery, recreation, fish, and wildlife values as compared to conditions present at the date of designation for both of California Klamath WSR and the Oregon Klamath WSR. Since there would be no “invasion” of either WSR or “unreasonable diminishment” of their values, the NPS found that the proposed dam removal and associated restoration actions are fully consistent with protections afforded by the WSRA. A final determination, dated September 30, 2022, determined that the proposed action would not invade the designated river in either state, would enhance the scenery, fish, and wildlife of all areas, would enhance recreation and fishing in both areas while reducing whitewater boating values in Oregon.

i. Executive Order 11998: Floodplain Management

As identified in Chapter 3, Section 3-15 of the EIS, the proposed action would have an adverse effect on the floodplain of the hydroelectric reach, but these impacts have been minimized to the maximum extent practicable with the inclusion of the management plans. The EIS has determined that there would be short and long term, significant, unavoidable adverse effects to the floodplain in the hydroelectric reach from streambed aggradation, deposition of fine sediments, changes in hydrology and morphology, and conversion of reservoirs to free flowing river channel. Potential impacts include changes in flooding regime, and disconnection of the floodplain from tributary and mainstem channels following drawdown. Adverse impacts to the floodplain would be minimized through additional grading to enhance floodplain connectivity, placement of Large Woody Debris and willow baffles, installation of irrigation systems to promote growth of riparian areas, as well as implementation of the adaptive management strategy outlined in the Reservoir Area Management Plan. Additional minimization measures would be implemented during drawdown as described in the Reservoir Drawdown and Diversion Management Plan. The proposed project is intended to restore the hydroelectric reach to a free flowing river, including restoring floodplain function and services.

For these reasons, the proposed action is in compliance with Executive Order 11988.

j. Executive Order 11990: Protection of Wetlands

The Corps completed a preliminary jurisdictional determination (dated February 1, 2022) for the proposed action based on a Wetland Investigation Summary report, dated September 2021 submitted by the KRRC. The potential jurisdictional areas identified in the Wetland Investigations report were verified by the Corps during the site visit on July 23, 2019. No changes were made to the submitted maps or report. See Section 3.5.2.2 of the EIS for more information about survey methods and results.

Following dam removal and reservoir drawdown about 57.1 acres of wetlands and 15.5 acres of riparian vegetation dependent on reservoir hydrology would be disconnected from their water sources. Impacts to wetlands are described in Section 3.5.2.2 of the EIS. The net result of the proposed dam removal would be an expected re-distribution of wetland resources within the Klamath River ecosystem, with losses in those areas where wetlands formed as a consequence of dam building and reservoir establishment, and gains in areas where natural topography would support re-establishment of wetlands after sediment redistribution is complete. The sediments stored behind the dams would be discharged from the reservoirs primarily within a 6 month time frame, but there would likely be some sediment movement at a much lower level for some amount of time following drawdown, depending on precipitation. Therefore, the temporary disturbances to wetlands in the lower reaches of the river's floodplain would be expected to last for several years but is not expected to be significant or result in the loss of wetlands. It is not known how long it would take for the re-distribution of sediments to be complete after the proposed dam removals.

Indirect impacts to wetlands would result as a consequence of dam removal. Two general types of indirect impacts to wetland resources are anticipated. First, those wetlands currently located on reservoir fringes and created by deposition of sediment at the heads of the reservoirs, would be affected as the water levels drop during and after drawdown. It is anticipated that much of the reservoir wetlands at the heads of these reservoirs would be hydrologically disconnected when drawdown occurs. The remaining wetland areas may be affected by lower water levels associated with the restored river and may revert to upland conditions. It is expected the reservoir wetlands would be drained. However, some of these wetlands are likely to reestablish as riverine/riparian wetlands along the restored river habitat in the areas where the reservoirs exist currently.

The second type of indirect effects to wetlands would occur when discharged sediments are deposited on existing wetlands. It is anticipated that wetlands in the lower reaches of the basin could be affected by sediment deposition. There would be temporary indirect impacts to wetlands in the lower river where topographic gradients are minimal and where greater sediment deposition would be expected to occur. Wetlands in these areas would be impacted by sediment deposition and re-working by fluvial action in the years following the proposed dam removal. It is anticipated the natural riparian associated wetlands would reestablish at locations adjacent to

the restored river where the topography provides the physical characteristics necessary for wetland establishment. In addition, it is likely wetlands would reestablish in depressional areas (such as old meander scars, oxbows, and depressions) within the floodplain area of the river.

These impacts would be minimized with the implementation of the Reservoir Area Management Plan (RAMP) and Terrestrial Wildlife Management Plan (TWMP). See Section 2.1.2.11 and Section 3.5.3 of the EIS for detailed information on these plans. These impacts would be further minimized through implementation of Condition 14 of the CA WQC. These plans propose activities that would create 19.2 acres of palustrine wetlands and 306.8 acres of riparian vegetation. The applicant proposes to voluntarily perform adaptive management activities that would result in the creation of wetlands and riparian areas to compensate for lost wetland and riparian resources. The Corps did not request nor is requiring compensatory mitigation for the project as the project is wholly restorative. While the acreage of palustrine wetlands lost within the limits of work would exceed the estimated acreage of created wetlands following restoration activities, the combination of natural recruitment and active restoration is expected to create a significant net gain in riparian and wetland habitat.

KRRC anticipates implementation of these plans would provide for no net loss in wetland acreage. Additionally, the removal of the four dams would result in the return of the Klamath River to a free-flowing river that would restore natural processes including sediment transport and seasonal flooding that promote development of riparian vegetation. Conditions of the WCSs would be included as special conditions in the permit.

The proposed action's incremental contribution to the cumulative effect associated with loss of wetlands and riparian vegetation would be significant; however, there would also be gains in wetland and riparian habitat following restoration. Based on the RAMP, restoration of wetland/riparian habitat would restore 306.8 acres of riparian vegetation and 19.2 acres of palustrine wetlands following reservoir drawdown. With implementation of the RAMP, permanent wetland loss at the reservoirs would be reduced. In contrast, wetlands would likely benefit from increased water availability under the proposed action, particularly in areas such as the J.C. Boyle bypass reach where water availability is currently limited.

For these reasons, the proposed action is in compliance with Executive Order 11990.

k. Executive Order 13175: Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians

As the lead federal agency, FERC was responsible for conducting consultation with Indian Tribes as defined in Exec. Order section 1(b), and other non-federally recognized tribes as recommended by the California Native American Heritage Commission. Efforts to consult with the Indian Tribes began after the filing of the original surrender application on September 23, 2016. By letters dated October 18 and 26, 2017, Commission staff initiated consultation with participating Tribes. This was followed by Tribal consultation meetings held on January 16-19, and on February 5, 2018. Consulted Indian Tribes included the Hoopa Valley Tribe, California;

Karuk Tribe; Yurok Tribe of the Yurok Reservation, California; Klamath Tribes; Modoc Nation; Quartz Valley Indian Community of the Quartz Valley Reservation of California; Resighini Rancheria, California; Confederated Tribes of Siletz Indians of Oregon; Cher-Ae Heights Indian Community of the Trinidad Rancheria, California; Confederated Tribes of the Warm Springs Reservation of Oregon; Confederated Tribes of the Grand Ronde Community of Oregon; Confederated Tribes of the Warm Springs Reservation of Oregon, Elk Valley Rancheria (California), Pit River Tribe (California), and the Tolowa Dee-Ni Nation.

Beginning in June 2019 and continuing until March of 2022, FERC participated in multiple tribal meetings with the Yurok Tribe, including a government-to-government meeting requested by the tribe on June 17, 2021, and held on October 11, 2021. On March 9, 2022, the Yurok Tribe requested status as cooperating agency for the preparation of the EIS. This status was granted. Additionally, on March 1, 2022, FERC staff met with the Shasta Indian Nation and the SHPO to discuss tribal concerns.

In a letter dated January 18, 2022, pursuant to its trust responsibilities under the federal trust doctrine, the Corps sent tribal outreach letters to interested tribes requesting additional information on the above project and offered to meet to discuss any issues concerns. Tribal outreach letters were sent to the Hoopa Valley Tribe; the Cher-Ae Heights Indian Community of the Trinidad Rancheria; the Yurok Tribe of the Yurok Reservation, California; the Shasta Indian Nation; the Shasta Indian Nation; the Karuk Tribe; Quartz Valley Indian Community of the Quartz Valley Reservation of California; Resighini Rancheria, California; and the Klamath Tribes. In response to these letters, the Corps received consultation requests from the Shasta Indian Nation and the Yurok Tribe. No other tribes responded to the letters. The Corps met with the Shasta Nation on February 3, 2022, to discuss the Shasta Indian Nation history and the Lower Klamath Project. The Corps met with the Yurok Tribe on August 5, 2022, following a request for a government-to-government consultation to update the Yurok Tribal Council on the Corps' role in the permitting action and the respective timeline. As the consultation resolved the Yurok Tribe's concerns, the consultation was completed.

The proposed action is in compliance with Executive Order 13175.

I. Executive Order 12898 and Executive Order 14008: Environmental Justice (Title VI of the Civil Rights Act)

See Section 3.13 (Environmental Justice) of the EIS for a complete description of how environmental justice communities within the project's area of review were identified and the analyses of potential impacts that was performed.

The FERC issued a Notice of intent and a scoping document on June 17, 2021, in order to request comments on environmental issues, schedule and environmental review and notice public virtual scoping sessions. The scoping document contained information about four virtual scoping meetings. Any person who was unable to attend a scoping meeting, or desired to provide further comment, was encouraged to submit written comments and information to the FERC by

August 19, 2021. All comments, whether spoken or delivered in person at meetings, mailed in, or submitted electronically, were considered in the preparation of this EIS.

As described in Section 3.13.2 of the EIS, the FERC used a 5-mile radius of the project boundary for identification of environmental justice communities and analysis of the localized effects related to the project's decommissioning. Where the project was determined to have the potential to result in downstream direct effects on a resource, a broader geographic scope beyond the 5-mile radius was used. Lastly, to address all downstream effects, a geographic scope that included all block groups within a 1-mile radius buffer along the Klamath River from J.C. Boyle Dam to the confluence of the Klamath River and Humbug Creek was used. The geographic scope included 11 block groups (1 in Jackson County and 5 in Klamath County, Oregon; and 5 in Siskiyou County, California). Of the 11 block groups, 4 were considered environmental justice communities. These block groups border the Copco No. 1 and Iron Gate Reservoirs and the Klamath River below Iron Gate Dam. See Section 3.13.3 of the EIS for more information on the demographic characteristics of these block groups.

Issues considered in the evaluation of environmental justice include human health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors. The EIS identified potential effects on Environmental Justice (EJ) communities from changes in Geology and Soils (slope stability and sediment release); Water supply; Aquatic Resources; Recreational opportunities; Fire Management; Traffic; Aesthetics; socioeconomics; and air quality and noise. See Section 3.13.4 of the EIS for more detailed information on the effects of the project on EJ communities.

See Section 3.13.5 for a detailed description of the effects of the Proposed Action with FERC staff modifications. The EIS determined that that there would be temporary, adverse effects on environmental justice communities associated with dam removal activities include effects on slope stability, sediment deposition, air quality, noise, and traffic. Many of these effects would be significant. However, the project includes mitigation associated with these resources. Long-term, potential adverse effects on environmental justice communities would be related to groundwater wells, fire management, reservoir angling, changes in access to and type of recreation opportunities, and changes in county tax revenues.

The EIS determined that the Proposed Action with FERC staff modifications would have a disproportionately high and adverse effect on environmental justice populations. However, the effects associated with the proposed action would mostly be mitigated, and beneficial effects associated with dam removal would outweigh the long-term, adverse effects associated with the proposed action. See section 3.13.5 of the EIS for more information on beneficial effects.

The proposed action is in compliance with Executive Order 12898 and Executive Order 14008.

IX. Consideration of Mitigation Measures

The Proposed Action with FERC Staff Modifications includes the full restoration of the Klamath River ecosystem and native anadromous fisheries by removing four hydroelectric dams. Voluntary system restoration and adaptive management elements for the project include developing and implementing revegetation plans, adaptive management monitoring plans, documenting and monitoring sediment transport and water quality, and implementation of fisheries restoration projects. These dams have significantly altered the natural hydrodynamics and fluvial geomorphic processes of the Klamath River for almost a century. Removal of the dams would have a significant impact to the existing ecosystem, including fisheries, wetlands and other waters of the U.S., until the natural river dynamics and processes reach equilibrium.

As part of the original application, the applicant voluntarily submitted rationale for why this project should be considered self-mitigating as well as draft management plans. The draft management plans proposed a means to document and monitor sediment transport and aggradation, as well as plans for reestablishment of wetlands along the river corridor and within the drawn-down reservoir areas. The draft revegetation, monitoring and adaptive management plans have been designed to document trends, such as sediment deposition areas, native vegetation establishment and cover, and noxious, non-native species establishment and cover. In addition, fisheries mitigation has also been developed in consultation with NMFS and USFWS. All of these actions have or would be designed and implemented to compensate for permanent, temporary and indirect impacts to existing wetlands and fisheries resources due to permanent reservoir draw-down from the dam removals and sediment impacts from smothering and/or eroding existing wetlands found along the riparian edge of the wetted perimeter of the river and wetlands that have established on islands within the OHWM of the river.

The Proposed Action with FERC Staff Modifications includes measures to restore land occupied by existing facilities and reservoirs and to minimize adverse effects on environmental resources, which are detailed in the 16 management plans listed in Table 2.1-1 of the EIS. Of the 16 management plans required for implementation of the project, approximately nine of the plans include minimization and mitigation measures that would occur in Corps jurisdictional areas and would result in decreases to adverse effects from the project. Additional minimization measures associated with the Proposed Action with FERC Staff Modifications can be found in Section 2.3 of the EIS. Those minimization measures discussed in the EIS that relate to activities within the Corps jurisdiction would be included in the DA permit Special Conditions, including those conditions mandated by the WQCs and the BOs.

The FERC determined that the environmental protection, mitigation, and enhancement measures proposed, along with FERC staff's additional recommendations (preferred alternative), would adequately protect most environmental resources, restore project lands to good condition, minimize adverse effects on environmental resources, maximize benefits to the Chinook salmon fishery that is of vital importance to Indian Tribes, and restore the landscape of the entire hydroelectric reach to a more natural state consistent with the Wild and Scenic designated

sections within and downstream of the hydroelectric reach. The EIS further determined that while some significant temporary and short-term, adverse effects would occur from decommissioning the project as proposed, the proposed environmental protection, mitigation, and enhancement measures would provide significant protection for environmental resources.

X. Compliance with 404(b)(1) Guidelines

a. Restrictions on Discharge

Based on the discussion in Chapter 4.0 of the EIS are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into “waters of the U.S.” or at other locations within these waters?

Yes ___ No X

The Proposed Action with FERC Staff Modifications includes all the conditions of Section 401 WQCs issued by the California Water Board and Oregon DEQ, and the terms and conditions specified by NMFS and FWS in their BOs to monitor incidental take, as well as several minor modifications to KRRC’s proposed measures recommended by FERC staff. There is no practicable alternative that would result in less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into waters of the U.S. or at other locations within these waters. See Section 4.0 of the EIS.

If the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

N/A – the project is not in a special aquatic site.

Will the discharge:

Violate state water quality standards?

Yes ___ No X

See Section B of this document for more information on water quality. The proposed project includes 401 WQCs from both California and Oregon, including required special conditions, that would ensure that the project does not violate water quality standards. Effects to water quality standards from the proposed project are discussed in detail in Section 3.3.2.1 of the EIS. Overall, the project would result in a long term, significant, beneficial effect on water quality throughout the entirety of the Klamath Basin. Information on these beneficial effects can be found in Section 3.16.4 of the EIS. The proposed action’s long-term, incremental contribution to beneficial cumulative effects on water quality within the hydroelectric reach and in the Lower Klamath River would be significant.

Violate toxic effluent standards under Section 307 of the Clean Water Act?

Yes ___ No X

The proposed project was assessed for risk of contamination to biota and humans from the release of reservoir. The Sediment Evaluation Framework (SEF) was used to determine the suitability of reservoir sediments for environmental exposure. See Section 3.3.2.3 of the EIS for a full description of the SEF process. The evaluation of potential contaminants, which was conducted using information from several regulatory agency databases, indicates the absence of significant spills and the lack of changes in major land use or developments within the vicinity of the reservoirs since sediment collection in 2010. Extensive evaluation of reservoir sediments shows that these are relatively homogeneous, have generally low concentrations of contaminants, and are not acutely toxic. Thus, accumulated sediments in reservoirs behind the four project dams would likely have no effects on the health of humans or fish and wildlife when released during dam removal.

Jeopardize endangered or threatened species or their critical habitat?

Yes ___ No X

See Section C of this document for a summary of potential effects to endangered or threatened species and their critical habitat. Additional information can be found in the EIS at the referenced sections. The applicant provided BOs, including terms and conditions, that provide for the protection of endangered and threatened species and their critical habitat. Neither BO resulted in a jeopardy determination or adverse modification to critical habitat.

Violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes ___ No X

No marine sanctuaries exist within the project boundaries or adjacent to the project.

Evaluation of the information above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s):

() based on the above information, the material is not a carrier of contaminants.

(X) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

() acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

Will the discharge contribute to significant degradation of “waters of the U.S.” through adverse impacts to:

Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and/or special aquatic sites?

Yes ___ No X

As described above in Section VIII-b, the Proposed Action with FERC staff modifications would not result in an adverse effect to human health or welfare through the implementation of management plans, minimization measures, and required conditions described in the WQCs. Additionally, reservoir sediments have been evaluated for the presence of toxic substances and were found to be clean and would not propose a risk to human health. The same minimization measures and conditions to protect water quality would ensure that there is no risk of pollution that would impact fish, shellfish, wildlife or special aquatic sites.

Life stages of aquatic life and/or wildlife?

Yes ___ No X

The discharge of material from reservoirs would not result in a permanent degradation to waters of the U.S. The reservoir material was tested for potential toxicity to aquatic and terrestrial wildlife and found to be suitable for release downstream. The quantity of material discharged would result in short term changes to instream, riparian, wetland and floodplain habitats, which would result in short term adverse effects to aquatic and terrestrial wildlife. However, the long term effects of the project would result in reconnection of river floodplains, improved instream habitat complexity, and increase in the overall quantity of riparian vegetation, and a more natural system, which would benefit fish and wildlife species. In addition, the implementation of proposed adaptive management activities would ensure that the discharge of reservoir material would not result in permanent adverse effects to any life stages of aquatic or wildlife species.

Diversity, productivity, and stability of the aquatic life and other wildlife? Or wildlife habitat or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes ___ No X

The proposed project would result in a long-term benefit to aquatic life and other wildlife through restoration of natural river processes, increasing the quantity and availability of instream habitat, and providing new habitat areas for future use. Downstream movement of stored reservoir sediment and removal of project dams would restore the natural sediment functions and provide new spawning areas for aquatic life and new functioning wetland areas. Additionally, the

placement of discharge material on adjacent floodplains would provide new areas for riparian species, resulting in improvements to water quality, benefiting aquatic and wildlife species. In the event that the discharge material causes passage barriers to tributaries, proposed sediment management adaptive management activities would be implemented to ensure that discharge material does not result in long term adverse effects to the diversity, productivity or stability of fish and wildlife species.

Recreational, aesthetic and economic values?

Yes ___ No X

The discharge of reservoir material would not result in adverse effects to recreational, aesthetic or economic values as the material would continue to move downstream to the ocean and would only be found in significant quantities in the first 8 miles downstream of Iron Gate Dam. Changes in instream habitat resulting in new areas for white water rafting would result in a benefit to recreational opportunities and the economic value of the region. The remaining approximately 170 miles of river would continue to provide similar recreational opportunities as now exist for boating and fishing and the discharge of material would not be visible as to degrade the aesthetic value of the river. Lastly, the discharge material would not adversely affect existing recreational opportunities, and therefore economic values would remain similar to existing conditions, as described in Sections 3.13.4.8 and 3.16.8 of the EIS.

Will all appropriate and practicable steps be taken to minimize adverse impacts of the discharge on the aquatic ecosystem? Does the proposal include satisfactory compensatory mitigation for losses of aquatic resources?

Yes X No ___

The Proposed Action with FERC Staff Modifications would entail the temporary discharge of fill within Other Waters of the U.S. (Klamath River). The Proposed Action with FERC Staff Modifications would result in permanent impacts to jurisdictional waters which include but are not limited to, removal of dam embankments and associated structures, placement of fill within powerhouses and tailraces, placement of boulders in the mainstem Klamath River for channel roughness, placement of erosion and protection at the dam sites, removal of reservoir sediments, installation of boat ramps, and bridge installation. Temporary impacts to jurisdictional waters include construction of access roads and work pads to facilitate dam removal, installation of temporary bridges, changes in water quality, and increases in turbidity. The Proposed Action with FERC Staff Modifications is at its core a restoration project to reestablish the natural river functions and processes, including those of wetland and riparian habitat.

As the Project is implemented, the exposed reservoir areas would be restored and stabilized to ensure water quality and ecological benefits. As the Klamath River re-establishes its historic channel, off-channel wetlands, floodplain terrace wetlands, and riparian fringe wetlands and habitats are expected to reform naturally along both the mainstem of the Klamath River and along tributaries to the Klamath River that are currently inundated by the reservoirs. The Project would restore approximately 10.1 acres of wetlands and 65.8 acres of riparian habitat at J.C.

Boyle reservoir area, 18.9 acres of wetlands and 96.0 acres of riparian habitat at Copco No. 1 reservoir area, and approximately 18.8 acres of wetlands and 47.7 acres of riparian habitat at the Iron Gate reservoir area. Additionally, there would be no net loss of waters from the discharge of fill material. Therefore, the project is considered to be self-mitigating and does not require compensatory mitigation.

As identified in Section IV of this ROD, the Corps has determined there are no practicable alternatives to the proposed discharge that would have fewer adverse effects to the aquatic ecosystem. Special conditions to further minimize adverse effects to the aquatic ecosystem would be added to the permit, if issued, as identified in Section IX of this ROD. See Section IX of this ROD for additional information regarding the proposed minimization and mitigation measures. In addition, special conditions placed on the permit, if issued, would further minimize adverse effects to waters of the U.S. The long-term effects of the Proposed Action with FERC Staff Modifications, in addition to the included minimization and mitigation measures, are expected to result in the restoration of natural ecological processes throughout the Klamath River Basin. The environmental protection, mitigation, and enhancement measures proposed, would adequately protect most environmental resources, restore project lands to good condition, minimize adverse effects on environmental resources, maximize benefits to the Chinook salmon fishery that is of vital importance to Indian Tribes, and restore the landscape of the entire hydroelectric reach to a more natural state consistent with the Wild and Scenic designated sections within and downstream of the hydroelectric reach.

b. Factual Determinations

1. Physical Substrate Determination

Section 3.1 of the EIS identifies the affected environment in regard to geology and soils and Section 3.1.3 discusses the nature and degree of effect, individually and cumulatively, on the characteristics of the substrate within Corps jurisdictional areas. The total amount of sediment that has accumulated in the project reservoirs is estimated to be about 15.5 million cubic yards (or 4.3 million tons) (table 3.1-2 of the EIS). More than half of this volume is accumulated in Copco No. 1 Reservoir. As identified in Section IV of this ROD, the Corps' 404(b)(1) scope of analysis is limited to the effects associated with the discharge of dredged/fill material into waters of the U.S. resulting from release of reservoir sediments and placement of fill from for dam removal and construction of temporary infrastructure to support dam removal. Minimization measures detailed in the Reservoir Drawdown and Diversion Plan would minimize effects to substrate.

The sediment accumulated in the reservoirs is comprised entirely of natural river run aggregate from the Upper basin and is similar in size, shape and material to that of the substrate located below the dams. There are no known significant inputs of other material that occur in the Upper basin that would introduce non-native material or material of a different composition to that located downstream. Effects to substrate downstream of the hydroelectric reach would not be significant as reservoir sediments would continue to be mobilized in the water column and not settle out in significant quantities before reaching the offshore environment or change existing substrate composition. Additionally, the Proposed Action with FERC staff modifications

includes minimization measures that would ensure that drawdown and the subsequent discharge of reservoir sediments would not result in significant adverse effects to substrate elevation, bottom contours, or changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharge material.

Given that the discharge would be released in the winter when water volumes are at their highest, would be released over several weeks to months, and would be monitored if necessary to avoid flooding or unanticipated flow events, we have determined that there are no potential changes in substrate elevation and bottom contours based on the proposed method, volume, location, and rate of discharge. Additionally, proposed drawdown activities include water jetting and physical material movement to ensure maximum sediment mobilization to decrease the potential for adverse effects from remaining sediments.

There would be no impacts to physical substrate from the temporary placement of fill for construction of temporary infrastructure to support dam removal. Fill material placed for dam removal activities would consist of clean, river run gravel, similar to size and shape of existing sediments and substrate downstream. Following completion of dam removal activities, fill would be removed to the maximum extent practicable and remaining material would be released downstream. Fill quantities from these activities would not be of sufficient quantities as to create an impact on substrate downstream.

The discharge material would provide material for the restoration of bed, bank and channel areas within the currently inundated hydroelectric reach. Release of sediment materials would provide high quality substrate material and would provide areas for riparian and wetlands to reoccupy. Minimization measures included in the proposed management plans would ensure that the discharge would not have a significant adverse effect on substrate.

2. Water Circulation, Fluctuation, and Salinity Determination

Section 3.2.3.2 of the EIS discusses effects of changes in water quantity in the system on downstream flooding. Drawdown of the reservoirs would result in a one-time, temporary release of approximately 4.3 million tons of river run aggregate from Iron Gate Dam. This discharge would be released incrementally over several months starting with drawdown at J.C. Boyle Dam and would progress downstream through all four dams. If needed, water jetting and sediment evacuation activities would assist in movement of sediment not mobilized in the water column to ensure that the maximum quantity of sediment is removed from the reservoirs during the larger discharge event. The discharge of material during drawdown would have a temporary, effect on water fluctuations as large volumes of reservoir water enters the system and moves downstream. This effect is expected to occur for approximately 8 miles downstream and would last until reservoirs are nearly emptied. The effect from this discharge would be minimized downstream of Iron Gate Dam by water inputs from tributaries located within this 8-mile reach, which would dilute incoming waters and minimize the effect from the discharge. The discharge of material would not result in water diversions or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime.

The discharge of material would not cause changes in the bed, bank or channel of the Klamath River, nor would the discharge effect water circulation, long term water fluctuations, water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, or impact eutrophication. While some material from the discharge is expected to settle out as it moves downstream, significant accumulations of discharge material are not expected to occur as the majority of the material is expected to move through the system and be deposited offshore. Additionally, the discharge does not contain saline waters that would change downstream salinity levels. Water composition in the discharge is substantially the same as receiving waters.

The placement of temporary fill material for dam removal activities would not have an impact on water circulation, water fluctuation, or salinity. Fill would be of limited quantity and release of this material would be insignificant as compared to the quantity of sediment and material in background conditions. Additionally, this material would be mobilized in the water column and be transported to the offshore environment, further decreasing the potential for the fill material to have an effect on water circulation, fluctuation or salinity.

Therefore, we have determined that the discharge would not have an adverse effect on water circulation, fluctuation, water chemistry, salinity levels, water clarity or color, odor, taste, dissolved gas levels, temperature, nutrients, or cause eutrophication as the discharge does not contain saline waters, would not result in significant changes to the channel bed that would change water circulation, and would be temporary in nature so as not to effect water fluctuations or water quality including the above constituents following drawdown activities.

3. Suspended Particulate/ Turbidity Determinations

Sections 3.1.3.2 to 3.1.3.1.4 of the EIS discusses effects on the mobilization of sediments. Adverse effects, including elevated turbidity levels and increases in suspended particulates from the discharge of sediments may occur for up to one year and would decrease in severity moving downstream. Inputs from downstream tributaries would decrease these effects and overall levels of suspended particulates would be subject to environmental conditions during drawdown. Long term effects from the discharge on suspended particulates and turbidity would be insignificant as reservoirs sediments would move through the system and be deposited in the offshore environment and suspended particulate levels and turbidity would return to normal levels within one year of drawdown.

The discharge material that would be mobilized during reservoir drawdown includes material of the same grain size of the receiving material given that sediment accumulated in the reservoirs is comprised entirely of natural river run aggregate from the Upper basin and is similar to that of the substrate located below the dams. The size and shape of the discharge plume would mimic a natural high flow event, would be temporary in nature, and would not cause violations of water quality standards. The discharge event is not anticipated to be large enough to overtop the existing downstream channel. The discharge event would not occur in a way as to result in a combined adverse effect on current patterns, water circulation or fluctuations, wind or wave action, and other physical factors on the movement of suspended particulates.

The proposed method to discharge the material from the reservoirs is described in section 2.1.2.11 of the EIS. The Proposed Action with FERC Staff Modifications includes minimization and adaptive management activities to minimize effects from the discharge of material. Discharge of reservoir material is a one-time event and subsequent discharge events are not anticipated.

The quantities of temporary fill material placed for road construction and dam removal activities would not have a significant effect on suspended particulates and turbidity. The volume of material needed for these activities is insignificant in comparison to the background levels of suspended particulates and turbidity that would be occurring at the time of construction. Additionally, fill material placed for these activities would be removed to the maximum extent practicable, thereby further decreasing the quantity of discharge fill into the system.

Therefore, the discharge of dredged/fill material would have a temporary, adverse effect on suspended particulate and turbidity, lasting for up to one year, but would not have a long-term effect overall as suspended particulate and turbidity levels would return to background levels following the drawdown year.

4. Contaminant Determination

Section 3.3.2.2 of the EIS discusses effects from the introduction, relocation, or increase of contaminants into the downstream environment. The discharge material would be comprised entirely of reservoir sediments which were evaluated and analyzed using the Sediment Evaluation Framework to determine if toxic or harmful levels of contaminants were present in any of the reservoirs (See section 3.3.2.3 of EIS). Extensive evaluation of reservoir sediments shows that sediments are relatively homogeneous, have generally low concentrations of contaminants, and are not acutely toxic. Thus, accumulated reservoir sediments, and therefore discharge materials would have no effects on the health of humans or fish and wildlife when released during dam removal. The discharge would not introduce any contaminants into the system and would have no effect on the aquatic environment.

All fill material used for dam removal activities would be comprised of clean, river run gravels and would not introduce any contaminants into the aquatic environment.

Therefore, we have determined that since all fill material within the discharge would not contain any known contaminants, that the discharge of the dredge/fill material would not have any effect on the aquatic environment.

5. Aquatic Ecosystem and Organism Determination

Sections 3.4 and 3.6 of the EIS discuss effects on indigenous aquatic ecosystem and organisms. Potential effects to substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, are discussed in more detail in the sections above.

Drawdown of the reservoirs and the subsequent discharge would result in high suspended sediment concentrations and fine sediment deposition in spawning gravel during and following drawdown and would have a temporary adverse effect, individually and cumulatively, on the

structure and function of the aquatic ecosystem and indigenous aquatic organisms. These adverse effects are anticipated to last for up to one year and would decrease in severity moving downstream. Following drawdown and removal of dam infrastructure no additional discharges of dredge/fill material are anticipated.

The Proposed Action with FERC Staff Modifications includes minimization and adaptive management strategies that would prevent the loss of environmental values and functions. Adaptive management activities proposed to minimize potential adverse effects from the discharge of dredge/fill material and to ensure access to tributaries following drawdown include the use light machinery and manual labor to move materials and enhance access and longitudinal connectivity of the tributaries with the mainstem Klamath River and add pieces of large wood to tributaries either in the channel or on the floodplain/terrace to promote habitat complexity.

In the long term, dredge/fill material deposited in the system would replenish spawning material depleted during the existence of the dams and would have a beneficial effect on indigenous aquatic organisms and the aquatic ecosystem.

Therefore, we have determined the discharge of dredge/fill material would have a short term, adverse effect on the aquatic ecosystem and indigenous aquatic organisms and would result in a long term, beneficial effect on the structure and function of the aquatic ecosystem as a whole.

6. Proposed Disposal Site Determination

There are no specific identified disposal sites within Corps jurisdiction as part of the Proposed Action with FERC Staff Modifications. This is a special case with unique environmental conditions. As this is a large-scale restoration project, there is adequate justification to show that widespread dispersion of the reservoir sediments by natural means would not result in significantly adverse environmental effects. Accordingly, the discharged material would be spread naturally in a very thin layer over a large area of the substrate rather than be contained within a specific disposal site. The majority of the sediment would be discharged into the mainstem Klamath River where it would be diluted and mixed with the watercourse in the existing environment and be mobilized downstream until it reaches the offshore environment where it would be further diluted to an insignificant quantity. Therefore, the discharge would have no effect on any specific proposed disposal site, but instead would have a temporary, adverse effect on areas within the active channel for up to one year following drawdown. Potential adverse effects to the aquatic environment are discussed above.

7. Determination of Cumulative Effects on Aquatic Environment

Section 3.16 of the EIS discusses cumulative impacts. In the short term, as discussed above, the discharge would have short term, unavoidable effects on the aquatic environment, but long-term effects would be beneficial. Implementation of wetland and stream adaptive management activities and the requirements of special conditions that would be included the DA permit, if issued, would ensure that cumulative adverse effects on the aquatic ecosystem are minimized to the maximum extent practicable. Benefits to the aquatic environment include increases in water quality, restoration of the natural hydrologic flow regime and sediment transport processes,

improvements to instream habitat and floodplain connection, and an overall increase in wetlands and riparian habitat throughout the basin. These benefits would result in an overall positive cumulative effect on the aquatic environment. When solely evaluating potential effects of the sediment discharges, there would be no cumulative effect on the aquatic environment as all discharges would be temporary in nature and are not anticipated to have a long-term adverse effect.

8. Determination of Secondary Effects

Section 3.3 of the EIS identifies the secondary (indirect) effects of the Proposed Action with FERC Staff Modifications on the aquatic ecosystem. Secondary impacts resulting from the dam removal are expected to be beneficial overall and in the long-term. Beneficial, long term secondary impacts would from the discharge of dredge/fill materials include increases in spawning ground sediment input, scouring of accumulated sediments that would result in increased pool depths, scouring of accumulated floodplain sediments, and deposition of sediments that would provide for riparian and wetland recolonization. These secondary effects would result in overall improvements to fisheries resources environmental, economic and cultural benefits. These benefits are likely to be realized beyond the immediate project area, into other areas of the North Coast and Southern Oregon as well. The shift in aquatic resources is also considered a secondary impact attributable to the project that would likely be detrimental to the ecosystem as a whole on a temporary basis but would ultimately be beneficial once the Klamath River ecosystem stabilizes after the dams are removed. Secondary adverse impacts to shellfish would occur from the dam removal activities, but this resource would likely recover to populations far exceeding those currently existing and more in line with the historic composition and numbers of shellfish in the estuarine/delta area of the river.

The disposal site complies with the requirements of the 404(b)(1) Guidelines.

XI. Public Interest Review

a. The relative extent of the public and private need for the proposed work has been considered

The Proposed Action with FERC Staff Modifications would result in the protection, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality. The project would advance the long-term restoration of the natural fish populations in the Klamath River Basin, with particular emphasis on restoring the salmonid fisheries used for commerce, recreation, subsistence, and Tribal cultural purposes. Any short- and long-term, adverse environmental effects and the loss of power generation resulting from the Proposed Action with FERC Staff Modifications would be outweighed by the substantial long-term environmental benefits gained from project decommissioning, as stated in the EIS. The environmental and public benefits of the Proposed Action with FERC Staff Modifications would exceed those of the no-action alternative (status quo).

b. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work has been evaluated:

No other reasonable alternative location would meet the purpose and need of the project as removing dams or other infrastructure on a different river would not result in a free-flowing Klamath River. Additionally, alternatives considered using other methods for dam removal would result in additional adverse impacts to the aquatic environment as described in Section 2.0 and Appendix A of the EIS. Alternatives considered in the EIS have been evaluated for compliance with the Section 404(b)(1) Guidelines, as discussed in the Section VI of this ROD. The Corps has determined there are no other practicable locations or methods to accomplish the objective of the proposed work that would result in fewer adverse environmental effects.

c. The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited has been reviewed:

The project would result in a permanent, beneficial effect on the entire Klamath River watershed and on the region. Overall, the project would result in benefits to conservation, aesthetics general environmental concerns, wetlands, fish and wildlife values, flood hazards, floodplain values, food and fiber production, recreation, and water quality by restoring the Klamath River back to its natural state, improving water quality for aquatic species, and reconnecting the floodplain to the river. Adverse impacts to economics, historic properties, shore erosion and accretion, property ownership would occur in the short term, but activities included in the proposed management plans would minimize these effects to a minor level. Decreases in energy production from removal of the dams would be replaced by production of energy from other regional facilities and the economics of the region would shift to a more recreationally based economy focused on fishing and white water rafting. The existing private lands comprising the project footprint would be transferred to public ownership, resulting in an increase in recreational opportunities and a benefit to the public. There would be no effect to water supply and conservation, navigation, or mineral needs, as the project does not provide water to municipal users, and no mineral extraction occurs in the area. Further details on these effects are found in Section 3.0 of the EIS.

The Corps has carefully weighed the beneficial and detrimental effects of the Proposed Action with FERC Staff Modifications on the public interest, balancing the beneficial effects against the adverse effects. Effects most closely related to the Corps' regulated activities (i.e. the discharge of fill material into Waters of the U.S.) as well as those effects related to health and welfare of the people, have been given more weight than those effects not within the Corps regulatory authorities. Therefore, the effects to navigation, wetlands, fish and wildlife values, erosion and accretion, water quality, flood hazards, floodplain values, historic properties, safety, and the needs and welfare of the people, were given greater weight than effects to land use, food and fiber production, energy needs, property ownership, traffic, air quality, noise, aesthetics, recreation, and economics. In light of the analyses above and considering the need for the Proposed Action with FERC Staff Modifications and the lack of alternatives that would meet the purpose and need of the project, the Corps concludes that issuance of the permit is not contrary to the public interest.

XII. Special Conditions

The following special conditions would be included in the permit to ensure the project is not contrary to the public interest and complies with the 404(b)(1) Guidelines:

1. Performance standards shall be adhered to as per the Reservoir Area Management Plan (RAMP), dated February 2021. To ensure success of the restoration areas described by the RAMP, you shall monitor restoration areas for a minimum of 5 years or until the restoration measures described in the RAMP are met, whichever is greater. This period shall commence upon completion of decommissioning, construction, and drawdown.
2. You will prepare and submit an Annual Compliance Report within six (6) months of concluding drawdown activities, and annually thereafter by April 1 of each year for as long as the Renewal Corporation has performance obligations under the RAMP. This report shall include all relevant information as described on pages 87-130 of the February 2021 RAMP. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions shall be provided.

Rationale: These special conditions are necessary to ensure avoidance and minimization of impacts to waters of the U.S. as well as ensure successful mitigation and replacement of the functions of the aquatic environment that would be lost as a result from the construction of the proposed project. (33 C.F.R. § 320.4(r)(1); 33 C.F.R. § 325.4(a); 33 C.F.R. pt. 332, 40 C.F.R. pt. 230).

3. You shall comply with all terms and conditions of the enclosed Water Quality Certification from the California State Water Resources Control Board (CARWQCB), titled “Lower Klamath Project License Surrender Federal Energy Regulatory Commission Project No. 14803 Siskiyou County, Klamath River and associated tributaries, Amendment to Water Quality Certification for Lower Klamath Project License Surrender”, dated November 3, 2022, and the Water Quality Certification from the Oregon Department of Quality (DEQ), titled “Lower Klamath River Dam Removal Project USACE #: SPN-2003-279850 Section 401 Water Quality Certification,” dated September 6, 2022.

Rationale: This condition is necessary to ensure compliance with Section 401 of the Clean Water Act for the GP verification (33 U.S.C. § 1341; 33 C.F.R. § 320.3; 33 C.F.R. § 320.4(d); 33 C.F.R. § 325.2(b)(1); 33 C.F.R. § 325.4(a)(1).

4. You are responsible for all work authorized herein and ensuring that all contractors and workers are made aware and adhere to the terms and conditions of this permit. You shall ensure that a copy of the permit and associated drawings are available for quick reference at the project site until all construction activities in waters of the United States authorized by this permit are completed.

Rationale: This condition is necessary to ensure that all workers on site are aware of the terms and conditions of the permit in order to ensure compliance with the permit and applicable conditions (33 C.F.R. § 325.4; 33 C.F.R. pt. 326).

5. Discharges within Waters of the U.S. shall consist only of clean and nontoxic fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete with exposed reinforcement bars (if access to rebar is safe, rebar protruding out of concrete will be cut flush), and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act. All newly poured concrete to cure for a minimum of 10 days prior to coming into contact with open water.

Rationale: This condition is necessary to ensure that contaminated material is not placed in waters of the United States (33 C.F.R. § 325.4(a); 40 C.F.R. pt. 230).

6. At least 30 days prior to initiation of construction activities in waters of the United States authorized by this permit, you shall notify this office in writing of the anticipated start date for the work. No later than 30 calendar days following completion of construction activities in waters of the United States authorized by this permit, you shall notify this office in writing that construction activities have been completed.

Rationale: This condition is necessary to assist the Corps in scheduling compliance inspections to ensure compliance with the permit and applicable conditions (33 C.F.R. § 325.4; 33 C.F.R. pt. 326).

7. Prior to initiation any construction activities in waters of the United States authorized by this permit, you shall install and maintain construction best management practices (BMPs) on-site to prevent degradation to on-site and off-site avoided waters of the United States. Methods shall include the use of appropriate measures to intercept and capture sediment prior to entering waters of the United States, as well as erosion control measures along the perimeter of all work areas within 500 feet of on-site and off-site avoided waters of the United States to prevent the displacement of fill material. All BMPs shall be in place prior to initiation of (each phase of) construction activities in waters of the United States authorized by this permit. You shall ensure the BMPs are inspected bi-weekly and are maintained in good condition while ground disturbing activities are occurring, until construction activities in waters of the United States authorized by this permit are complete. All BMPs shall remain until construction activities within 500 feet of waters of the United States are completed and all disturbed soils are stabilized.

Rationale: This condition is necessary to minimize adverse impacts to water quality, from construction activities, to the maximum extent practicable (33 C.F.R. § 320.3(a); 33 C.F.R. § 320.4(d)).

8. You shall implement the enclosed, September 2022, Programmatic Agreement (PA), entitled “*Programmatic Agreement among the Federal energy Regulatory Commission,*

the California State Historic Preservation Office, the Oregon State Historic Preservation Office, and the Advisory Council on Historic Preservation regarding the license surrender, decommissioning, and removal of the Lower Klamath Project (FERC Project No. 14803-001 and 2082-063) Klamath County, Oregon and Siskiyou County, California” and signed by these entities, in its entirety. The FERC has been designated the lead federal agency responsible for implementing and enforcing the PA as signed. If you fail to comply with the implementation and associated enforcement of the PA, this office may determine that you are out of compliance with the conditions of your permit and suspend the permit. Suspension may result in modification or revocation of the authorized work.

9. If human remains, historic resources, or archeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and the permittee shall immediately (within one business day of discovery) notify the Corps. The permittee shall perform any work required by the Corps in accordance with Section 106 of the National Historic Preservation Act and Corps regulations.

Rationale: These conditions are necessary to ensure compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; 33 C.F.R. § 320.3(g); 33 C.F.R. § 325.2(b)(3); 33 C.F.R. pt. 325; Appendix C; 36 C.F.R. pt. 800).

10. Any change in the project design, materials, or construction methods, must be approved by the Corps in writing.

Rationale: This condition is necessary to ensure compliance with the permit and applicable conditions and to ensure that the proposed work and final restoration work has been conducted in accordance with the permit and all applicable conditions. (33 U.S.C. § 1344(a), 33 U.S.C. § 401 et. seq., 33 C.F.R. § 320.4(r)(1), 33 C.F.R. § 325.4(a)(3); 33 C.F.R. pt. 326).

11. To remain exempt from the prohibitions of Section 9 of the Endangered Species Act, the non-discretionary Terms and Conditions for incidental take of federally-listed Species shall be fully implemented as stipulated in the enclosed Biological Opinions titled “Biological Opinion Lower Klamath Project 08EYRE00-2021-F-0127 Federal Energy Regulatory Commission, California; Agency: U.S Fish and Wildlife Service Region 10 Sacramento, CA Biological Opinion Written by: Yreka Fish and Wildlife Office U.S. Fish and Wildlife Service Region 10, Pacific Southwest Region, December 22, 2021” (pages 6-8 of the Incidental Take Statement) dated December 22, 2021 and “Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Surrender and Decommissioning of the Lower Klamath Hydroelectric Project No. 14803-001, Klamath County, Oregon and Siskiyou County, California” (pages 324-330) dated December 17, 2021. Project authorization under this permit is conditional upon compliance with the mandatory terms and conditions associated with incidental take. Failure to comply with the terms and conditions for incidental take, where a take of a federally-listed species occurs, would constitute an unauthorized take and non-compliance with the NWP authorization for your project. The USFWS and NMFS is/are,

however, the authoritative federal agency for determining compliance with the incidental take statement and for initiating appropriate enforcement actions or penalties under the Endangered Species Act.

Rationale: This condition is necessary to ensure compliance with Section 7 of the Endangered Species Act for impacts to threatened and/or endangered species and Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act for adverse effects to essential fish habitat (16 USC 1531 et seq.; 16 USC 1801, et seq.; 50 CFR 402; 50 CFR 600; 33 CFR 320.4(j)(4); 33 CFR 325.2(b)(5); 33 CFR 325.4(a)(1)).

IX. Findings

- a.** The evaluation of the proposed action and alternatives was done in accordance with all applicable laws, executive orders, regulations, and agency regulations. The EIS and supporting documents are adequate and contain sufficient information to make a reasoned permit decision. The Corps participated in the development of the EIS as a cooperating agency. The Corps has considered all of the alternatives, information, analyses, and objections submitted by State, Tribal, and local governments and public commenters for consideration by the lead and cooperating agencies in developing the environmental impact statement. The Corps' comments and suggestions have been satisfied and there are no omissions of factors important to the Corps' decision. Therefore, pursuant to 40 C.F.R. § 1506.3(c), the Corps adopts the EIS prepared by the lead federal agency, the FERC.
- b.** The selected alternative is the Proposed Action with FERC Staff Modifications, and with appropriate and practicable mitigation measures to minimize environmental harm and potential adverse impacts of the discharges on the aquatic ecosystem and the human environment. The Proposed Action with FERC Staff Modifications, as mitigated by these conditions, is considered the as well as the least environmentally damaging, practicable alternative.
- c.** The discharge complies with the Section 404(b)(1) guidelines, and the Proposed Action with FERC Staff Modifications is the least environmentally damaging, practicable alternative with the inclusion of appropriate and practicable general and special conditions in the permit to minimize pollution or adverse effects to the affect ecosystem.
- d.** After a careful weighing of the beneficial and detrimental effects closely associated with the proposed action, as described in Section X, issuance of a Department of the Army permit, with the inclusion of special conditions on the permit, as prescribed by regulations published in 33 C.F.R. Parts 320 to 332, and 40 C.F.R. Part 320 is not contrary to the public interest.

Attachments:

Attachment A: California 401 Water Quality Certification

Attachment B: Oregon 401 Water Quality Certification

Attachment C: U.S. Fish and Wildlife Service Biological Opinion

Attachment D: National Marine Fisheries Service Biological Opinion

Attachment E: Section 106 National Historic Preservation Act Historic Properties Management Plan and Programmatic Agreement

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