

Regional Water Quality Control Board
North Coast Region
Thursday, December 10, 2020

ITEM: 3

SUBJECT: Overview of Klamath Dam Removal and Project Site Restoration Activities, Schedules, and Permitting Approach (*Clayton Creager, Heaven Moore - Regional Water Board; Diane Barr - Camas LLC; Dave Coffman Resource Environmental Consulting (RES); and Erik Esparza - Kiewit Corporation*)

BOARD ACTION: This is an information item only; no action will be taken by the Board.

BACKGROUND: The implementation of Klamath Basin TMDLs and the removal of the four hydroelectric facilities on the Klamath River through the Klamath Hydroelectric Settlement Agreement (known as the Lower Klamath Project) are essential to restoring water quality and supporting beneficial uses including Tribal cultural uses of the Klamath River. Removal of the dams also reopens over 360 miles of habitat for anadromous fish populations and restores a more dynamic hydrologic regime to the river. The purpose of this information item is to describe the status and progress of the dam removal project and Klamath River restoration and the Regional Water Board's role in permitting select aspects of the Lower Klamath Project.

Because dam removal is a core component of the restoration strategy for the Klamath River the project is supported by the Regional Water Board's Policy in Support of Restoration in the North Coast Region ([Restoration Policy - Basin Plan Amendment language](#)).

On November 17, 2020 a [Memorandum of Agreement \(MOA\)](#) was announced by Berkshire Hathaway-owned PacifiCorp, the States of California and Oregon, the Karuk and Yurok Tribes, and the Klamath River Renewal Corporation (KRRC) that describes how the parties will proceed with implementation of the Amended Klamath Hydroelectric Settlement Agreement (KHS 2016) and, ultimately, removal of the three dams in California (Iron Gate, Copco 1 and Copco 2) and one dam in Oregon (J.C. Boyle). This agreement resolves uncertainties introduced by the Federal Energy Regulatory (FERC) ruling of July 16, 2020 in which FERC approved a partial transfer of the license for the Lower Klamath Project from PacifiCorp to the KRRC, contingent on PacifiCorp remaining as a co-licensee. The MOA addresses the concerns raised by the July 2020 FERC ruling and allows the parties to submit an Amended License Surrender Application to FERC. With this action KRRC and oversight agencies can continue to move forward with all planning and permitting activities that will likely result in personnel and equipment being deployed in 2022 and pre-removal construction activities to commence. Restoration activities within the former reservoir footprints and where

structures have been removed will immediately follow dam removal and will continue for several years.

This update provides an overview of project activities and the permitting strategy that the Regional Water Board will use to ensure that all required water quality protections are employed to the extent possible to avoid or minimize water quality impacts. The expectation is that dam removal and the return of the river to a free-flowing condition will be achieved in 2023.

DISCUSSION:

Klamath Dam Removal Is A Water Quality and Ecosystem Restoration Priority: It is important to consider the water quality impacts of the Klamath River hydroelectric facilities in the context of the entire Klamath Basin and the water quality and water quantity stresses experienced throughout much of the Basin. In pursuit of fulfilling the goals of the Klamath Basin TMDLs, the Regional Water Board has collaborated with Native American Tribes, federal, state, and local agencies, non-governmental organizations, and individuals throughout the Klamath Basin to address water quality, habitat, and environmental flow issues unrelated to the dams.

The Executive Summary of the Klamath Dam Removal Overview Report for the Secretary of the Interior (SDOR 2012) provides a useful summary of the setting and conditions within the Klamath Basin:

“The Klamath Basin covers over 12,000 square miles in southern Oregon and northern California and contains many natural resources and economic opportunities related to fisheries, farming, ranching, timber harvest, mining, and recreation. Each of these resources and opportunities has economically sustained communities throughout the basin for many decades. The Klamath Basin is also home to six federally recognized Indian tribes who have depended on many of these same natural resources for thousands of years to support their way of life and spiritual wellbeing. Natural resources in the basin, including clean water, abundant and reliable supplies of fish, and terrestrial plants and animals, are central to their cultural identity. The construction of PacifiCorp’s hydroelectric dams on the Klamath River combined with the development of irrigated agriculture, both beginning in the early 1900s, contributed to declines in fisheries and water quality as well as to detrimental impacts to tribal resources and culture throughout the Klamath Basin. Crises in agricultural water availability and fish populations, combined with challenges and uncertainties involved in obtaining a new long-term Federal Energy Regulatory Commission (FERC) license for PacifiCorp’s Klamath Hydroelectric Project 2082 (inclusive of the J.C. Boyle, Copco 1, Copco 2, and Iron Gate dams) led willing basin stakeholders to come to agreement on the Klamath Hydroelectric Settlement Agreement (KHSA) and the Klamath Basin Restoration Agreement (KBRA) (see Section ES.1.3, The KHSA and KBRA).”

The SDOR included consideration of both dam removal (KHSA) and a comprehensive solution to water supply and environmental restoration (KBRA). The KBRA ended due to a lack of Congressional action. However, many aspects of the restoration program

are ongoing through other initiatives such as the United States Fish and Wildlife Service Klamath Integrated Fish Restoration and Monitoring Program, the implementation of the several TMDL Action Plans in the Klamath Basin, among others initiatives. It is through the Lower Klamath Project that the water quality issues associated with the hydroelectric facilities can be most effectively addressed, by removal of the hydroelectric facilities themselves.

The water quality related impacts of the hydroelectric facilities have been well documented and described in several comprehensive studies including the Klamath River TMDLs (NCRWQCB 2010), the SDOR (2012), and the Lower Klamath Project License Surrender – Final Environmental Impact Report (Final EIR April 7, 2020, see link below). Several of the impacts of the dams on water quality and beneficial support, which would be resolved through their removal, are briefly summarized below:

- Blockage of over 360 miles of spawning and rearing habitat for anadromous fish species, including Chinook salmon, steelhead, and the federally endangered coho salmon.
- Effects on seasonal water temperature both downstream of the reservoirs and within the reservoirs themselves that are harmful and disruptive to anadromous fish species downstream of the dams.
- Decreased dissolved oxygen in reservoir release waters during late summer and fall that is harmful to aquatic biota in the river immediately downstream of the dams.
- Source of nuisance algal blooms (cyanobacteria) that create hazardous conditions through seasonal toxin production within the reservoirs and downstream of the reservoirs.
- The dams are responsible for several contributing factors that significantly enhance infection and disease conditions for anadromous fish species downstream of the reservoirs, including altered hydrology, blockage of natural sediment loads, and the creation of riverine hot spots supporting increased abundance and density of parasites and stressful conditions for fish that increases their susceptibility to infection.

The above short list of the water quality and ecosystem impacts of the Klamath Hydroelectric Reservoirs underscores the importance of the Lower Klamath Project License Surrender and the forthcoming dam removal and river restoration actions.

The path toward dam removal and river restoration actions was paved by the State Water Board's April 7, 2020, adoption of the [final 401 Water Quality Certification](#) (401 Certification) and [Final Environmental Impact Report \(EIR\)](#) for the Lower Klamath Project License Surrender. The certification contains conditions for the protection of water quality pertaining to implementation of the Lower Klamath Project. Since July 2020, the State Water Board has been consulting with the Klamath River Renewal Corporation (KRRC) and other state and federal agencies and Native American Tribes on the development of plans required by the certification for the protection of water

quality. Information on the Lower Klamath Project License Surrender water quality certification process can be found on the State Water Board's [Lower Klamath Project webpage](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ower_klamath_ferc14803.html) at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ower_klamath_ferc14803.html

Klamath River Dam Removal and Site Restoration Activities:

In May 2019 the KRRC entered into a dam removal design-build contract with Kiewit Infrastructure West Co for removal of the four dams and associated hydroelectric facilities on the Klamath River, with Restoration Environmental Solutions (RES) for associated restoration activities, and with Camas LLC for associated regulatory approvals. Since May 2019, the design-build team has progressed to near-final design and have actively engaged with regulatory agencies, Native American Tribes, and stakeholders to develop the restoration approach and secure necessary regulatory approvals from federal, state, and local, agencies. In this effort, Camas staff is regularly engaged with Regional Water Board staff regarding plans to meet the terms of the water quality certification. On July 16, 2020, the FERC issued a License Transfer Order, conditioning that PacifiCorp and the KRRC serve as co-licensees during the removal of the four dams. On November 17, 2020, California Governor Gavin Newsom, Oregon Governor Kate Brown, leaders of the Karuk and Yurok Tribes, Berkshire Hathaway Energy and PacifiCorp reached an important understanding for dam removal while addressing the FERC interests of co-licensees. In support of this collective understanding, the KRRC and PacifiCorp jointly filed an Amended Application for Surrender of License (ALSA) to FERC, also on November 17, 2020. The ALSA advances the FERC process toward issuing the License Surrender Order.

At the December 10, 2020 Regional Water Board meeting, the KRRC team will provide an overview of the Project timeline; FERC process; pre-drawdown activities; drawdown activities; and post-drawdown activities.

Permitting Approach for Dam Removal Construction Related Activities and Fall Creek Fish Hatchery: To support completion of dam removal and river restoration activities, Regional Water Board staff have been working closely with the project team to develop a successful permitting approach for these project activities within the Regional Water Board's jurisdiction. The work necessary to remove the dams and restore the river within the project area will provide long-term benefits to the Klamath River Basin but will have short-term environmental impacts. This type of restoration project was specifically envisioned and articulated in the Restoration Policy in recognition that short-term impacts to water quality may be acceptable when those impacts are mitigated and outweighed by the long-term water quality benefits.

The work necessary to complete dam removal and the associated restoration work requires coverage under the Statewide Construction General Permit (CGP). It is anticipated by Spring 2021, a Time Schedule Order will be circulated for public review prior to consideration and issuance under Executive Officer signature concurrent with enrollment in the CGP. The Time Schedule Order will provide milestones toward full

compliance with the CGP and final site stabilization and restoration and reflects the anticipated short-term sediment impacts identified in the final approved 401 Certification and the Final EIR. This approach ensures all regulatory requirements are met and supports project completion for the long-term restoration benefit of the Klamath River.

Another key project element is the rehabilitation and operation of the Fall Creek Fish Hatchery. This hatchery is located on Copco Road in Siskiyou County and will support the rearing of an anticipated 30,000 lbs of Chinook salmon and 25,000 lbs of Coho salmon annually at maximum production to support the rehabilitation of fish populations. The facility is expected to operate for eight years, after which time the population is expected to stabilize without outside support. Regional Water Board staff anticipates bringing the NPDES Permit for the operation of Fall Creek Fish Hatchery to the Board for adoption by December 2021.

Following the presentations by Regional Water Board staff and the invited speakers at the December 10th Board meeting, staff welcome comments from the public and Board members and will be available to answer questions.

RECOMMENDATION: N/A

SUPPORTING DOCUMENTS:

SDOR. 2012. Secretarial Determination Studies - Final Secretarial Determination Overview Report (October 2012) - Final Klamath Dam Removal Overview Report for the Secretary of the Interior: an Assessment of Science and Technical Information (<https://klamathrestoration.gov/keep-me-informed/secretarial-determination/role-of-science/secretarial-determination-studies>)

NCRWQCB. 2010. Final staff report for the Klamath River Total Maximum Daily Loads (TMDLs) addressing temperature, dissolved oxygen, nutrient, and Microcystin impairments in California, the proposed site-specific dissolved oxygen objectives for the Klamath River in California, and the Klamath River and Lost River implementation plans. State of California North Coast Regional Water Quality Control Board, Santa Rosa, California.

http://www.swrcb.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/

Final EIR. 2020. Lower Klamath Project License Surrender – Final Environmental Impact Report (Final EIR)
[Final Environmental Impact Report](#)