Supplemental Project Description
Removal of Lower Klamath Project by Klamath River Renewal Corporation
June 2021

1 INTRODUCTION

The Klamath River Renewal Corporation (Renewal Corporation) (Applicant) has applied to the U.S. Army Corps of Engineers (USACE), San Francisco District, for a Department of the Army Permit, Clean Water Act Section 404(a) for the placement of approximately 212,000 cubic yards of fill (permanent and/or temporary) within 20 acres of jurisdictional waters in the Klamath River. The Proposed Action under consideration by the USACE describes the Department of the Army's jurisdictional portion of a broader action, Proposed License Surrender, ("License Surrender Project") under the jurisdiction of the Federal Energy Regulatory Commission (FERC). The License Surrender Project before the FERC is the Renewal Corporation's comprehensive plan to physically remove the Lower Klamath Project (FERC nos. 2082-063, 14803-001) and achieve a free-flowing condition and volitional fish passage, site remediation and restoration, and avoidance of adverse downstream impacts. The Department of the Army permit application is being processed pursuant to the provisions of Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq).

2 PROPOSED ACTION

The Lower Klamath Project consists of four hydroelectric developments on the Klamath River within Oregon and California: J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate. In September of 2016, the Renewal Corporation filed an *Application for Surrender of License for Major Project and Removal of Project Works,* FERC Project Nos. 2082-063 & 14803-001 (License Surrender). In November of 2020, the Renewal Corporation amended its License Surrender application and filed its Definite Decommissioning Plan (DDP) and related exhibits. The DDP is the Renewal Corporation's detailed plan to physically remove the Lower Klamath Project to achieve a free-flowing condition and volitional fish passage, and site remediation and restoration.

2.1 Project Location

The Lower Klamath Project is located within the hydroelectric reach of the Klamath River located in the states of Oregon and California from approximately River Mile 234 to River Mile 193. An overview map of the Lower Klamath Project including the four hydroelectric developments to be removed is included as Figure 1.

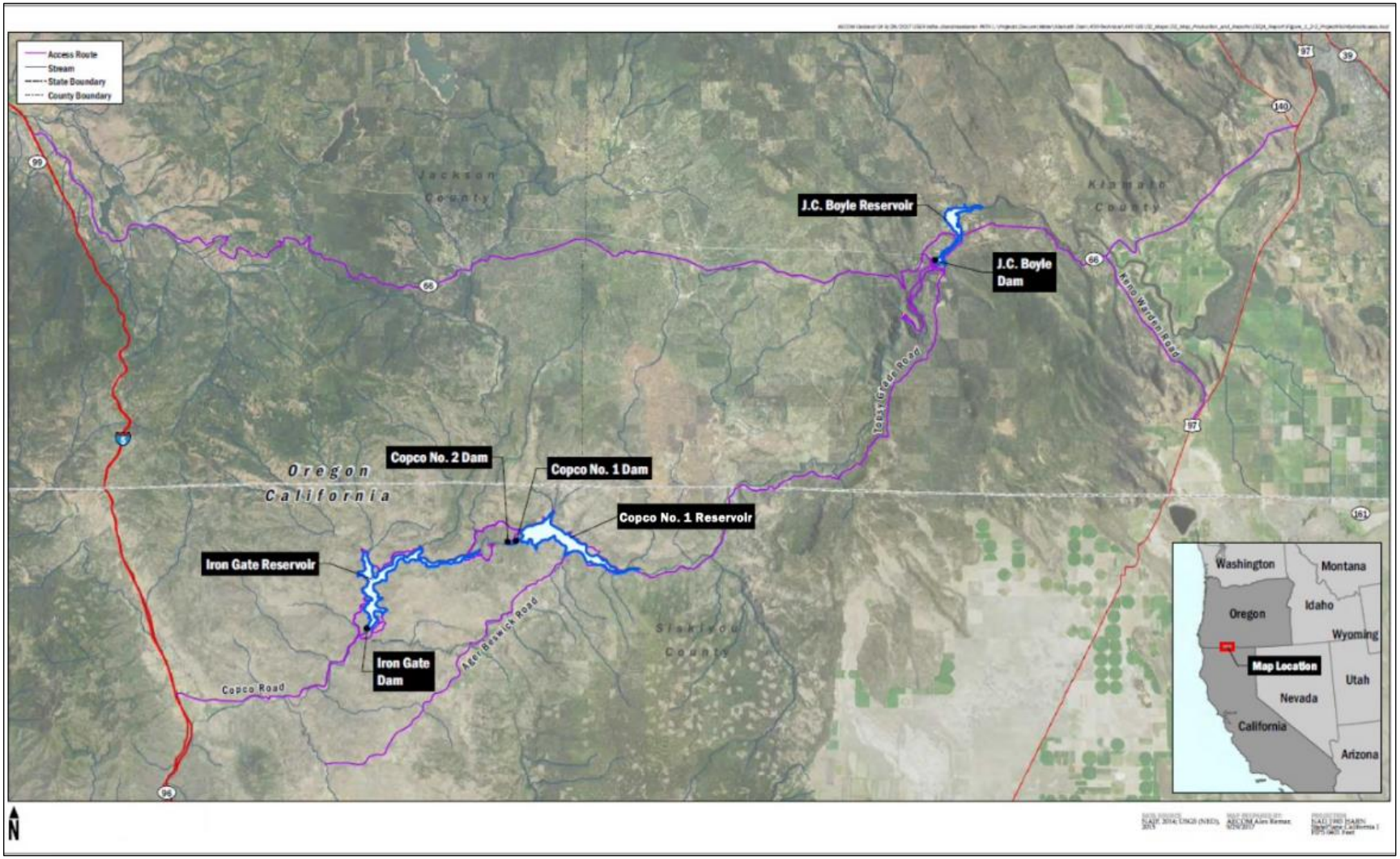

Figure 1. Overview map of the Lower Klamath Project.

2.2 Schedule

The License Surrender Project schedule is separated into three time periods: pre-drawdown, drawdown, and post-drawdown. Figure 2 includes the primary activities to occur during these three time periods. Pre-drawdown activities will likely begin as early as April of Year 1 and will occur for the remainder of Year 1. Drawdown activities are scheduled to begin as early as November of Year 1 and will continue for the remainder of Year 2. Post-drawdown activities are scheduled to begin halfway through Year 2 until the completion between Year 8 and Year 9.

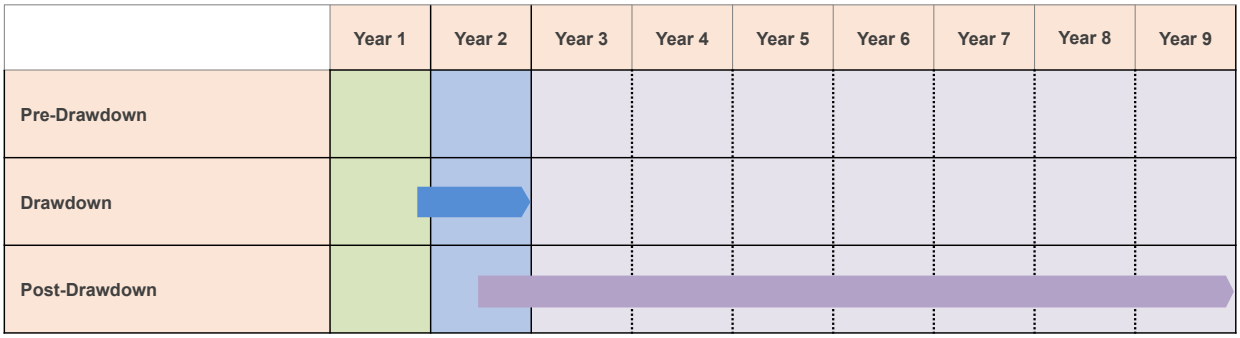

Figure 2. License Surrender Project Schedule

2.3 Proposed Action Impacts

Impacts of the Proposed Action are considered activities that occur in water regulated by the USACE as defined in Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq). USACE-regulated Proposed Action activities are limited to the discharge of permanent and/or temporary fill material within jurisdictional waters. The Renewal Corporation will conduct the following USACE regulated in-water work removal and fill activities at each development.

2.3.1 J.C. Boyle Development

The removal of the J.C. Boyle dam and its associated facilities will outside the jurisdiction of the USACE.

Dam and Facility Removal Activities

- Permanent fill will be placed within the powerhouse foundation and tailrace located along the edge of the mainstem Klamath River in the drawdown year.

Restoration Activities

- Permanent erosion protection materials will be placed upstream of the former dam on the left bank post-drawdown.
- Permanent placement of boulder clusters and large wood habitat features will be used to restore Spencer Creek, located upstream of J.C. Boyle Dam, post-drawdown.

Recreation Activities

- A permanent boat ramp will be installed along the edge of the newly established Klamath River channel at a new recreation site at Moonshine Falls, close to the current dam embankment, post-drawdown.

Fire Management Activities

- A permanent river access ramp will be installed along the edge of the newly established Klamath River channel at Pioneer Park West post-drawdown.
- A permanent dry hydrant will be installed along the edge of the newly established Klamath River at Pioneer Park West in the pre-drawdown year or post-drawdown.

Road/Culvert/Bridge Activities

- Temporary fill will be placed within the mainstem of the Klamath River to remove historical underwater bridge piers. The timing of this action will occur either in the drawdown year or post-drawdown.

Contingency Activities

The Renewal Corporation will make adaptive adjustments based on the conditions encountered following reservoir drawdown. These adaptive adjustments may include the following activities.

- Permanent placement of boulders for channel roughness to aid fish passage within the mainstem Klamath River post-drawdown.
- Permanent placement of materials to enhance the Spencer Creek channel bed post-drawdown.

2.4 Copco No. 1 Development

Dam and Facility Removal Activities

- Permanent removal of sediment from behind the dam to construct an outlet tunnel for drawdown. These materials will be disposed of upstream within the Copco No. 1 Reservoir. This activity will occur in the pre-drawdown year.
- A temporary work pad and access road will be constructed in the pre-drawdown year. These activities will occur downstream of the dam within the mainstem of the Klamath River to allow access to the dam. Permanent fill will be placed within the powerhouse foundation and tailrace located along the edge of the mainstem Klamath River post-drawdown.
- Permanent fill will be placed within a depression within the mainstem of the Klamath River located downstream of the base of the dam post-drawdown.

Restoration Activities

- Permanent erosion protection materials will be placed at the former dam site post-drawdown.
- Permanent boulders to enhance channel roughness to aid fish passage will be placed within the mainstem Klamath River post-drawdown.
- Beaver Creek and Deer Creek, located upstream of Copco No. 1 Dam, will be restored through the placement of permanent boulder clusters and large wood habitat features post-drawdown.

Recreation Activities

- A permanent boat ramp will be installed along the edge of the newly established Klamath River channel at the Copco Valley recreation site post-drawdown.

Fire Management Activities

- Permanent dry hydrants will be installed in Beaver Creek and Deer Creek in the pre-drawdown year.

Contingency Activities

The Renewal Corporation will make adaptive adjustments based on the conditions encountered following reservoir drawdown. These adaptive adjustments may include the following activities.

- Placement of permanent gravel within the mainstem Klamath River upstream of the former Copco No. 1 Reservoir to improve fish spawning habitat post-drawdown.
- Permanent placement of materials to enhance the Beaver Creek channel bed post-drawdown.

2.5 Copco No. 2 Development

Dam and Facility Removal Activities

Based on schedule and water year type, the Renewal Corporation will remove Copco No. 2 Dam in the pre-drawdown year or during the drawdown year (see Section 2.2).

- Temporary access road and work pad will be constructed downstream of the dam on the right bank and on the spillway sill in the pre-drawdown year.
- Reservoir sediment located upstream of the dam between the dam and existing cofferdam will be removed in the pre-drawdown year.
- Reservoir sediment located downstream of the dam on the left bank will be removed in the pre-drawdown year.
- Permanent removal of the remaining dam portions post-drawdown.
- Temporary work pad will be constructed upstream of the former dam to remove historical cofferdam post-drawdown.
- Permanent removal of the existing cofferdam within the former Copco No. 2 Reservoir post-drawdown.
- Permanent fill will be placed within the powerhouse foundation and tailrace located along the edge of the mainstem Klamath River post-drawdown.

Contingency Activities

The Renewal Corporation will make adaptive adjustments based on the conditions encountered following reservoir drawdown. These adaptive adjustments may include the following:

- Permanent placement of boulders to enhance channel roughness to aid fish passage within the mainstem of the Klamath River post-drawdown.
- Permanent erosion protection materials will be placed within the channel bed and on the right and left banks at the former dam site post-drawdown.

2.6 Iron Gate Development

Dam Facility and Removal Activities

- Temporary fill for an access track will be placed within the mainstem Klamath River below the dam to allow for dam removal in the pre-drawdown year.

- Sediment will be removed upstream of the intake structure to allow water flow through the intake in the pre-drawdown year.
- Erosion protection materials will be permanently placed on the downstream toe of the former spillway post-drawdown.
- Permanent fill will be placed within the powerhouse foundation and tailrace post-drawdown.

Restoration Activities

- Permanent erosion protection materials will be placed upstream of the former dam site on the left bank post-drawdown.
- Camp Creek, Scotch Creek, and Jenny Creek, located upstream of Iron Gate Dam, will be restored through the placement of permanent boulder clusters and large wood habitat features post-drawdown.

Recreation Activities

- A permanent boat ramp will be installed along the edge of the Klamath River channel at the Iron Gate recreation site post-drawdown.

Road/Culvert/Bridge Activities

- Temporary abutments for a single span trestle bridge will be installed upstream of Daggett Road bridge in the pre-drawdown year.
- Temporary fill for the construction of shoe-fly roadways and permanent replacement of the culverts and abutments at the road crossings will be placed in Camp Creek (at Copco Road), Scotch Creek (at Copco Road), and Fall Creek (at Daggett Road) in the pre-drawdown year.
- Temporary structural pads and lock-block support column structures will be placed in Dry Creek and Fall Creek to support the Copco Road crossings in the pre-drawdown year.

Fire Management Activities

- A permanent river access ramp will be installed along the edge of the newly established Klamath River channel at the Fall Creek Day Use Area post-drawdown.
- Permanent dry hydrants will be installed in Fall Creek and Jenny Creek in the pre-drawdown year.

Contingency Activities

The Renewal Corporation will make adaptive adjustments based on the conditions encountered following reservoir drawdown. These adaptive adjustments may include the following:

- Temporary bridge abutments will be installed within the mainstem Klamath River downstream of the Lakeview Bridge post-drawdown.
- Permanent boulders to enhance channel roughness to aid fish passage within Camp Creek, Scotch Creek, and Jenny Creek post-drawdown.
- Permanent boulders will be placed within in the mainstem Klamath River at the former dam site to aid fish passage post-drawdown.

City of Yreka Water Supply Line Activities

The City of Yreka water supply line currently traverses below the Iron Gate Reservoir. The existing water supply line will be replaced with a deeper and armored pipeline. A trench will be excavated across and within the Klamath

River behind a cofferdam for the construction of the new pipeline. The construction will be conducted in two stages to allow the river to be routed around the work zone and will result in temporary fill from the cofferdams and permanent fill to bury and protect the pipeline. This work will occur post-drawdown.

Fall Creek Hatchery Activities

The Fall Creek Hatchery will be modified as part of the Project. Modifications to the hatchery include the permanent installation of a water intake structure, two fish barrier velocity aprons, a concrete slab and walls for picket barriers, a berm, and fishway channel. This work will occur in the pre-drawdown year.

2.7 Restoration

The License Surrender Project is at its core a restoration project to reestablish the natural river functions and processes, including those of wetland and riparian habitat. As the License Surrender Project is implemented, the exposed reservoir areas will be restored and stabilized to ensure water quality and ecological benefits. Wetlands and habitats are expected to reform naturally along both the main stem and along tributaries that are currently inundated by the reservoirs as the Klamath River re-establishes its historic channel, off-channel wetlands, floodplain terrace wetlands, and riparian fringe. The Renewal Corporation analysis estimates that the License Surrender Project will 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 reservoir area, and approximately 18.8 acres of wetlands and 47.7 acres of riparian habitat at the Iron Gate reservoir area. Therefore, the License Surrender Project is considered to be self-mitigating.