UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

Klamath River Renewal Corporation

Project No. 14803-001

LICENSE SURRENDER ORDER LOWER KLAMATH PROJECT

Remaining Facilities Plan

December 2022

PUBLIC VERSION

| KLAMATH RIVER RENEWAL CORPORATION | Lower Klamath Project FERC Project no. 14803 |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| | Remaining Facilities Plan |
| | Klamath River Renewal Corporation 2001 Addison Street, Suite 317 Berkeley, CA 94704 |
| | December 2022 |

This page intentionally left blank.

Table of Contents

| 1.0 | Introduction1 | | |
|-----|---------------------|------------------------------------|---|
| 2.0 | Regulatory Context7 | | 7 |
| | 2.1 | Organizational Structure | 7 |
| | 2.2 | Specific Regulatory Interests | 7 |
| | 2.3 | Modifications to the Approved Plan | 8 |
| | 2.4 | Regulatory Approval Process | 8 |
| 3.0 | Repor | ting | 8 |

List of Tables

| Table 2-1. Lower Klamath River Management Plans | .7 |
|-------------------------------------------------|----|
| Table 2-2. Modifications to the Approved Plan | .8 |

List of Figures

| Figure 1-1. Lower Klamath Project Location | .2 |
|-----------------------------------------------------|----|
| Figure 1-2. J.C. Boyle Development Facility Details | .3 |
| Figure 1-3. Copco No.1 Development Facility Details | .4 |
| Figure 1-4. Copco No.2 Development Facility Details | 5 |
| Figure 1-5. Iron Gate Development Facility Details | .6 |

Appendices

- Appendix A California Remaining Facilities Plan
- Appendix B Oregon Remaining Facilities and Operations Plan
- Appendix C Consultation Record

1.0 Introduction

The Lower Klamath Project (FERC No. 14803) consists of four hydroelectric developments on the Klamath River: J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate (Figure 1-1). Specifically, the reach between J.C. Boyle Dam and Iron Gate Dam is known as the Hydroelectric Reach. 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). The Renewal Corporation filed the License Surrender Application as the dam removal entity for the purpose of implementing the Klamath River Hydroelectric Settlement (KHSA). In November of 2020, the Renewal Corporation filed its Definite Decommissioning Plan (DDP) as Exhibits A-1 and A-2 to its Amended License Surrender Application (ALSA). The DDP is the Renewal Corporation's comprehensive plan to physically remove the Project and achieve a free-flowing condition and volitional fish passage, site remediation and restoration, and avoidance of adverse downstream impacts (Proposed Action). In November 2022, the Commission approved the ALSA and issued the License Surrender Creder (LSO) approving facility removal and habitat restoration.

The Proposed Action includes the deconstruction of the J.C. Boyle Dam and Powerhouse (Figure 1-2), Copco No. 1 Dam and Powerhouse (Figure 1-3), Copco No. 2 Dam and Powerhouse (Figure 1-4), and Iron Gate Dam and Powerhouse (Figure 1-5), 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, original cofferdams, portions of the Iron Gate Fish Hatchery, residential facilities, and warehouses. Facility removal will be completed within an approximately 20-month period.

This Remaining Facilities Plan describes the measures that the Renewal Corporation will implement to protect water quality conditions associated with structures that will remain on-site following completion of the Proposed Action. The Renewal Corporation prepared 16 Management Plans to implement the DDP, and the Commission reviewed and approved these plans as conditions of its License Surrender Order. These Management Plans were developed in consultation with federal, state, and county governments and tribes.

The LSO Ordering Paragraph (T) approves the Remaining Facilities Plan as filed on December 14, 2021. The Renewal Corporation now submits limited modifications to this approved plan as stated in Table 2-2. These modifications include refinement in means and methods due to further consultation with the Oregon Department of Environmental Quality and California State Water Resources Control Board pursuant to the requirements in Ordering Paragraphs (D) and (E), respectively. Table 2-2 herein shows the material modifications to the approved version of this Remaining Facilities Plan. An updated Consultation Record for the Remaining Facilities Plan is included as Appendix C.

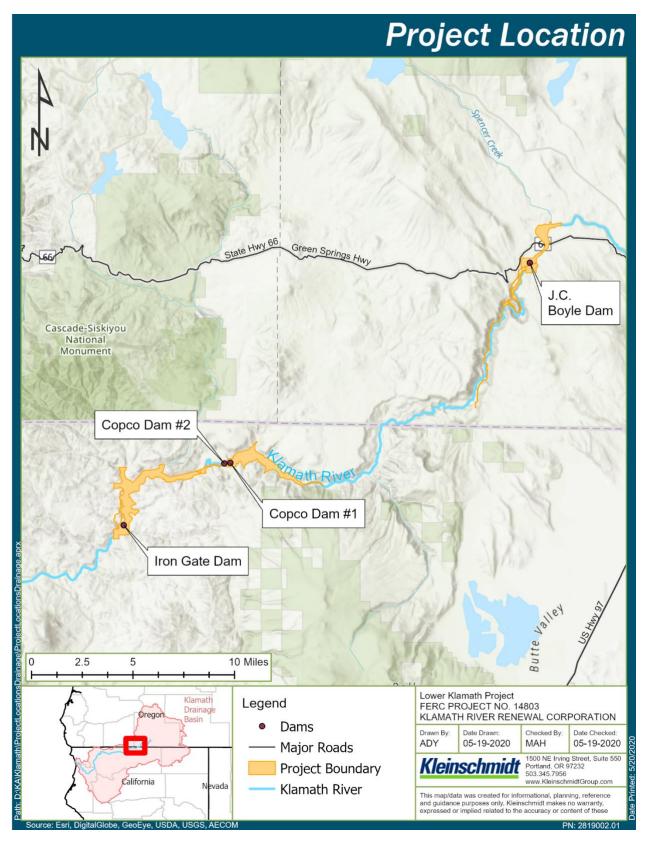


Figure 1-1. Lower Klamath Project Location

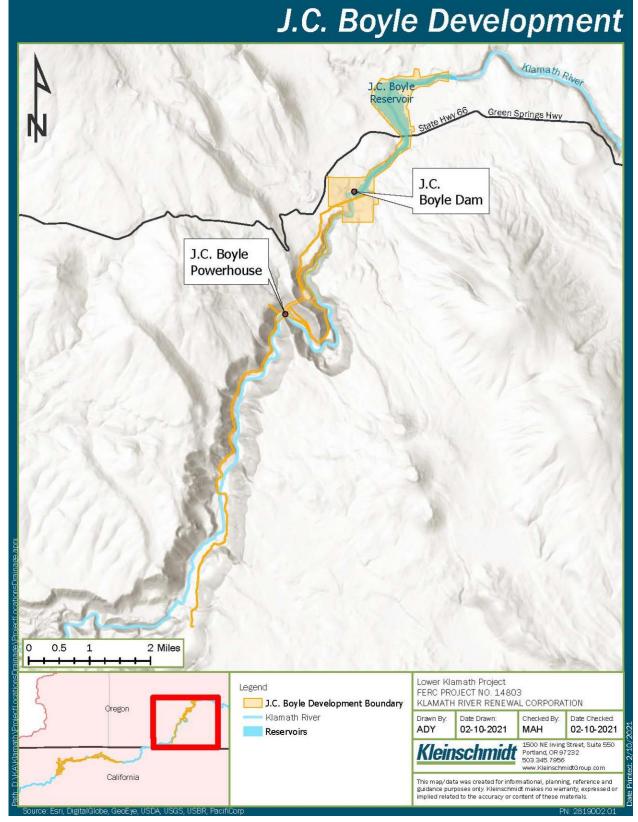


Figure 1-2. J.C. Boyle Development Facility Details

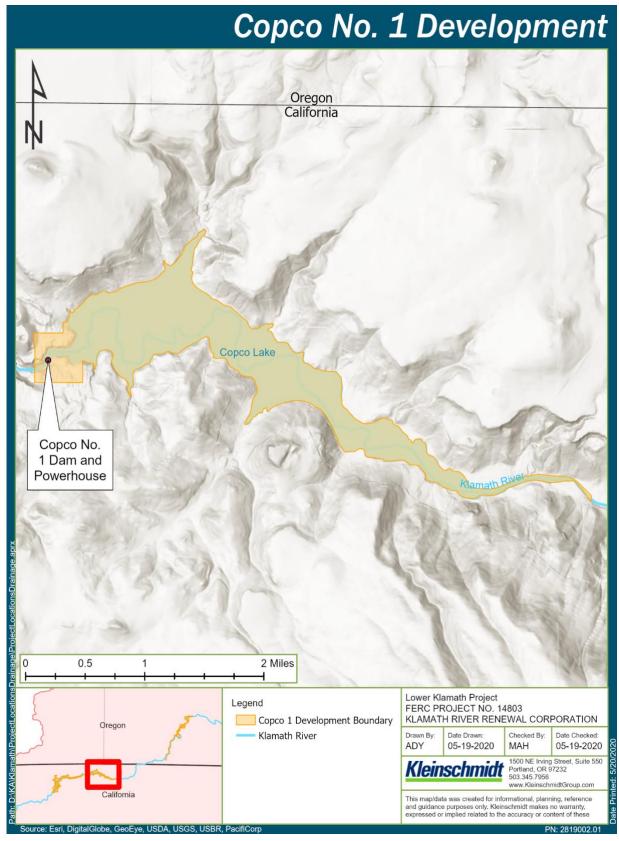


Figure 1-3. Copco No.1 Development Facility Details





Remaining Facilities Plan

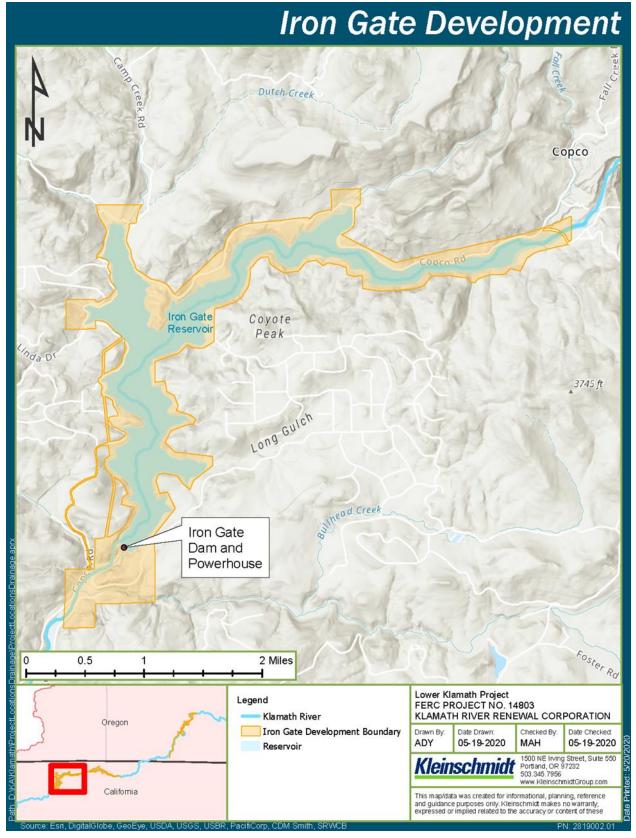


Figure 1-5. Iron Gate Development Facility Details

2.0 Regulatory Context

As described in Table 2-1, the Remaining Facilities Plan is one of 16 Management Plans implementing the DDP.

| 1. | Aquatic Resources Management Plan | 9. Remaining Facilities Plan |
|----|----------------------------------------------|---------------------------------------------------------------|
| 2. | Construction Management Plan | 10. Reservoir Area Management Plan |
| 3. | Erosion and Sediment Control Plan | 11. Reservoir Drawdown and Diversion Plan |
| 4. | Hatcheries Management and Operations Plan | 12. Sediment Deposit Remediation Plan |
| 5. | Health and Safety Plan | 13. Terrestrial and Wildlife Management Plan |
| 6. | Historic Properties Management Plan | 14. Waste Disposal and Hazardous Materials Management Plan |
| 7. | Interim Hydropower Operations Plan | 15. Water Quality Monitoring and Management Plan |
| 8. | Recreation Facilities Plan | 16. Water Supply Management Plan |

Table 2-1. Lower Klamath River Management Plans

2.1 Organizational Structure

The Remaining Facilities Plan identifies non-operational remaining structures and the measures the Renewal Corporation will implement to protect water quality conditions associated with these structures. These proposed measures are part of the Proposed Action. Specifically, the Remaining Facilities Plan includes an updated Consultation Record and two sub-plans, included amongst the Appendices identified below.

- Appendix A: California Remaining Facilities Plan
- Appendix B: Oregon Remaining Facilities and Operations Plan
- Appendix C: Consultation Record

2.2 Specific Regulatory Interests

The Renewal Corporation considered the following regulatory interests in the development of the Remaining Facilities Plan:

- California Section 401 Water Quality Certification
- Oregon Section 401 Water Quality Certification
- California Department of Fish and Wildlife Memorandum of Understanding
- California Environmental Quality Act, Final Environmental Impact Report
- Oregon Memorandum of Understanding
- Federal Energy Regulatory Commission Final Environmental Impact Statement

• Federal Energy Regulatory Commission License Surrender Order

2.3 Modifications to the Approved Plan

The Renewal Corporation has modified the December 2021 version of this plan in the following material respects to comply with the November 17, 2022, License Surrender Order.

| SUB-PLAN | MODIFICATIONS |
|-------------------------------------------------|--------------------------------------------------------------------|
| | Updated the Copco Village structures that will remain based on |
| Appendix A: California | consultation with the State of California. |
| Remaining Facilities Plan | Modified Table 2.3 to indicate that the Copco No. 2 Powerhouse |
| | will remain based on consultation with the State of California. |
| | Removed "Administrative and Residential Structures" from the |
| Appendix B: Oregon Remaining Facilities Plan | table of remaining facilities because all these structures will be |
| Facilities Plan | removed due to further consultation with the State of Oregon. |

Table 2-2. Modifications to the Approved Plan

2.4 Regulatory Approval Process

The Renewal Corporation will implement the Remaining Facilities Plan as approved by the Commission in the License Surrender Order. The Renewal Corporation will obtain and report to the Commission any approvals required by other agencies.

3.0 Reporting

By April 15 of each year, the Renewal Corporation will prepare and submit to the Commission an Annual Report which will include information pertaining to implementation of the Remaining Facilities Plan.

Appendix A

California Remaining Facilities Plan

| KLAMATH RIVER RENEWAL CORPORATION | |
|-----------------------------------------|-----------|
| | |
| | Klaı 2 |
| | |
| | |

Lower Klamath Project FERC Project No. 14803

California Remaining Facilities Plan

Klamath River Renewal Corporation 2001 Addison Street, Suite 317 Berkeley, CA 94704

> Prepared by: Camas LLC 680 G Street, Suite C Jacksonville, OR 97530

> > December 2022

This page intentionally left blank.

Table of Contents

| 1.0 | Introduction1 | | | 1 |
|-----|---------------|-----------|------------------------------------------|----|
| | 1.1 | Purpos | e of Management Plan | 1 |
| | 1.2 | Relatio | nship to Other Management Plans | 1 |
| 2.0 | Poter | ntial Wat | ter Quality Impact and Proposed Measures | 1 |
| | 2.1 | Identifi | cation of Remaining Facilities | 1 |
| | | 2.1.1 | Structures | 1 |
| | 2.2 | Measu | res to Protect Water Quality Impacts | 2 |
| | | 2.2.1 | Erosion and Sediment Control Protection | 2 |
| | | 2.2.2 | Hazardous Material Survey | 3 |
| 3.0 | Repo | rting | | 11 |
| 4.0 | References | | | |

List of Tables

| Table 2.1. Definitions of Construction Fill Materials | . 2 |
|-------------------------------------------------------|-----|
| Table 2.2. Copco No. 1 Remaining Structures | . 4 |
| Table 2.3. Copco No. 2 Remaining Structures | . 6 |
| Table 2.4. Iron Gate Remaining Structures | . 9 |

Appendices

| Appendix | A: | Figures |
|-------------|--------------|-----------|
| , ibbellary | <i>/ \</i> . | i igui co |

Figure A-1: Overview Map of the Copco No. 1 Development Figure A-2: Copco No. 1 Administrative and Residential Structures Figure A-3: Copco No. 1 Diversion Tunnel Figure A-4: Copco No. 1 Dam Structure Figure A-5: Copco No. 1 Penstock No. 3 Figure A-6: Copco No. 1 Powerhouse and Tailrace Figure A-7: Overview Map of the Copco No. 2 Development Figure A-8: Copco Village Figure A-9: Copco No. 2 Diversion Dam Figure A-10: Copco No. 2 Wood Stave Penstock and Conveyance Tunnels Figure A-11: Copco No. 2 Powerhouse Penstock Surge Tank Figure A-12: Copco No. 2 Overflow Spillway Figure A-13: Copco No. 2 Powerhouse Penstock Figure A-14: Copco No. 2 Powerhouse Figure A-15: Copco No. 2 Intake Structure Disposal Site Figure A-16: Overview Map of the Iron Gate Development Figure A-17: Iron Gate Diversion Tunnel and Gate Shaft Figure A-18a: Iron Gate Diversion Tunnel Intake Structure Figure A-18b: Iron Gate Diversion Tunnel Intake Structure Figure A-19: Iron Gate Powerhouse Penstock Figure A-20: Iron Gate Powerhouse and Tailrace Figure A-21: Iron Gate Spillway Disposal Site

1.0 Introduction

This California Remaining Facilities Plan is a subplan of the Remaining Facilities Plan that will be implemented as part of the Proposed Action for the Lower Klamath Project.

1.1 Purpose of Management Plan

The purpose of the California Remaining Facilities Plan is to identify the non-operational structures that will remain on-site following completion of the Proposed Action, identify potential water quality impacts associated with the presence of these structures, and state the measures the Renewal Corporation will implement to protect water quality from potential impacts associated with the presence of these structures.

1.2 Relationship to Other Management Plans

The California Remaining Facilities Plan is supported by elements of the following management plans for effective implementation: Erosion and Sediment Control Plan and the Waste Disposal and Hazardous Materials Management Plan. So as to not duplicate information, elements from these other management plans are not repeated herein but are, where appropriate, referred to in this California Remaining Facilities Plan.

2.0 Potential Water Quality Impact and Proposed Measures

2.1 Identification of Remaining Facilities

For the purposes of this plan, remaining structures are defined as structures or features affiliated with the Lower Klamath Project within the Limits of Work. These facilities remaining may or may not be non-operational following completion of the Proposed Action based upon the direction by the State of California, as the successor landowner, requesting facilities to remain for the State's future use. These structures may consist of buildings, utilities, portions of foundations, and other non-operational structural components associated with the dams. This plan discusses waste disposal sites only to the extent they overlap with remaining structures (e.g., spillways, powerhouse tailrace); all other future placement and management of material will be implemented in accordance with related management plans including the Waste Disposal and Hazardous Materials Management Plan.

2.1.1 Structures

The structures to remain on-site following completion of the Proposed Action at Copco No. 1, Copco No. 2, and Iron Gate Developments are presented in Table 2.2, Table 2.3, and Table 2.4. The tables include the following information pertaining to the structures that will remain onsite: project structure name, type of material to be left on-site, and the permanent measures that will be taken to reduce water quality impacts based on the condition in which it will be left (buried, capped, graded, etc.). Overview maps of Copco No. 1, Copco No. 2, and Iron Gate developments are included as Figures A-1, A-7, and A-16, respectively.

2.2 Measures to Protect Water Quality Impacts

The Renewal Corporation evaluated the potential for erosion or sediment runoff to surface waters and identified the presence of hazardous materials associated with structures to remain on-site.

2.2.1 Erosion and Sediment Control Protection

Erosion and sediment control temporary best management practices (BMPs) installed during construction are presented in the site-specific Stormwater Pollution Prevention Plan required as part of the National Pollutant Discharge Elimination System Construction General Permit.

Following demolition and the final placement of material within remaining facilities (if applicable), permanent BMPs will be installed for final stabilization. Monitoring and reporting required as part of the Stormwater Pollution Prevention Plan will be conducted to achieve final stabilization.

As part of the permanent BMPs, drainage swales may be constructed. Swales will be lined with Type E8 Bedding Material and/or Type E7a Erosion Protection in areas where the slope is greater than 5% and will be unlined and hydroseeded in areas where the slope is less than or equal to 5% (Knight Piésold 2022).

2.2.1.1 Fill Materials Definitions

Table 2.1 contains definitions of the material types used by the Renewal Corporation throughout the Project as fill and cap materials.

| TYPE | DESCRIPTION | DEFINITION |
|------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E4 | Select Fill | Cobbles, Gravel, and Sand, particles ranging from 4 in. to the #200 Sieve (0.0030 in.), low to no fines content, sourced from offsite. |
| E6 | Bedding | Cobbles and Gravel, particles ranging from 3 in. to 3/8 in., low to no fines content, sourced from offsite. |
| E7 | Erosion Protection | Boulders and Cobbles, particles ranging from +50 in. to 3 in., material subdivided into three classifications E7a/b/c, each with minimum D85, D50 and D15 values, sourced from existing erosion protection at the dam sites, or talus material from nearby borrow areas within limits of work. |
| E8 | Bedding Material | Cobbles and Gravel, particles ranging from 12 in. to 1 in., low to no fines content, sourced from offsite. |

Table 2.1. Definitions of Construction Fill Materials.

| TYPE | DESCRIPTION | DEFINITION |
|------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E9 | General Fill | Boulders, Cobbles, Gravel, Sand and Fines, particles ranging from 20 in. to the #200 Sieve (0.0030 in.), up to 30% fines content, sourced from on-site excavations or nearby borrow areas within limits of work. |
| E9a | General Fill | Boulders, Cobbles, Gravel, Sand and Fines, particles ranging from 20 in. to the #200 Sieve (0.0030 in.), up to 40% fines content, sourced from excavations or nearby borrow areas within limits of work. |
| E10 | Random Fill | Overburden, Rocks or Organics, no gradation requirements, sourced from on-site excavations. |
| CR1 | Concrete Rubble | Particles ranging from 36 in. to the #200 Sieve (0.0030 in.), with up to 30% fines content, steel reinforcement to remain in concrete, sourced from demolition of on-site concrete structures. |
| CR2 | Concrete Rubble | Particles ranging from 24 in. to the #200 Sieve (0.0030 in.), with up to 30% fines content, steel reinforcement to remain in concrete, sourced from demolition of on-site concrete structures. |
| | Riverbed Material | Material stockpiled on the right bank upstream of the Copco No. 1 Dam originates from the historic Copco No. 1 Dam excavation and is assumed to be suitable for direct placement as riverbed material. Riverbed material not sourced from this area must be well graded material with an upper particle size of approximately 36 inches, and a 15% maximum of material smaller than 6 inches (by volume). |

Notes:

- The proposed offsite source is the Knife River Corporation.

- Definitions provided by Knight Piésold (C. Vos), December 4, 2020.

2.2.2 Hazardous Material Survey

In April 2019, Hazardous Material Building Surveys (HMBS) were conducted for the Copco No. 1 (AECOM 2019a), Copco No. 2 (AECOM 2019b), and Iron Gate Developments (AECOM 2019c). Surveys were also conducted in October 2020 (Entek 2020a, 2020b, 2020c) to supplement and confirm the April 2019 HMBS, and are included in the Waste Disposal and Hazardous Materials Management Plan.

Hazardous materials, including but not limited to asbestos, lead-based paint, fuel, lubricating oil, and batteries, identified as part of these evaluations will be removed by the Renewal Corporation from structures that will remain on-site, unless otherwise directed by the State of California as the final landowner. Non-friable asbestos is not considered a hazardous waste and not subject to handling procedures under Title 22, Division 4.5, of the California Code of Regulations. Asbestos that is considered non-friable and attached to a structure that will be entombed will be buried in place. Non-hazardous and hazardous materials will be disposed of in accordance with the Waste Disposal and Hazardous Materials Management Plan, following the abatement specifications as presented by Entek (Entek 2020a, 2020b, 2020c).

| | PROJECT STRUCTURE | | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES |
|---|------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| | | | | Administrative and Residential Structures | |
| • | Historic operator building foundation | • | Concrete foundation | This concrete foundation has no negative impact on water quality and no further measures are proposed. | Figure A-2 |
| | | | | Diversion Tunnel | |
| • | Diversion tunnel | • | Concrete and embedded steel | The diversion intake approach tunnel will be removed to the level of the adjacent bedrock. The diversion intake and outlet portals will be filled and sealed with Type E7a Erosion Protection and armored with 10 ft of Type E7b Erosion Protection. The intake portal will have an additional layer of impermeable concrete material surrounded by 1 ft of Type E6 bedding. | Figure A-3 |
| | Dam Structure | | | | |
| • | Copco No. 1 Dam | • | Concrete and embedded steel below El. 2,472.1 ft Concrete attached to bedrock on west canyon wall | All remaining concrete or concrete rubble below the 100-year flood level will be covered with a minimum of 10 ft of riverbed material with an upper particle size of 36 in and a 15% maximum of material smaller than 6 in, graded to the riverbed slope. Where concrete is keyed into the bedrock on slopes, the concrete will be removed to match the adjacent bedrock surface. | Figure A-4 |

Table 2.2. Copco No. 1 Remaining Structures

| PROJECT STRUCTURE | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | | |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|
| | Penstock No. 3 | | | | |
| Penstock No. 3 | Underground portion of existing steel penstock | The portion of Penstock No. 3 that is already underground will be filled with Type E6 Bedding and the entrance will be blocked with Type E9 General Fill. All disturbed areas will be graded and will undergo final stabilization as specified in Section 2.2.1 of this plan. | Figure A-5 | | |
| | | Powerhouse and Tailrace | | | |
| PowerhouseTailrace | Concrete north wall Concrete and embedded steel below El. 2,488 ft | All void spaces within the powerhouse basement will be filled to the extent possible with Type E9 General Fill and Type CR2 Concrete Rubble. The fill material will be capped with 4 ft of Type E4 Select Fill. The area adjacent to the river channel will be armored with Type E7 Erosion Protection, 60" rock, class 10 ton and Riverbed Material as shown in Figure A-6. A stabilized berm will be constructed on the uphill side of the powerhouse area. The tailrace will be filled with Type E9 and E9a General Fill, graded to 2H:1V, and capped with 1 ft of Type E8 Bedding Material and 8 ft of Type E7c Erosion Protection. Disposal site details are further elaborated in the California Waste Disposal Plan. | Figure A-6 | | |

Source: Knight Piésold 2022

| PROJECT STRUCTURE | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | | |
|-------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|
| | Copco Village | | | | |
| Residential houses Asphalt roadway | Complete structuresAsphalt | Through consultation with the State of California as the successor landowner, specific structures at Copco Village will be transferred to the State of California for active usage and maintenance. Specific structures to remain are identified in Figure A-8, and the asphalt roadway between the remaining structures will also be retained. For the structures that will be removed, portions of the foundations and decommissioned buried utilities will be left in place and the surrounding ground will be graded to cover the remaining foundations and promote down-slope drainage. The Renewal Corporation will restore the areas where structures are to be removed using native vegetation. | Figure A-8 | | |
| | Diversion Dam | | | | |
| • Diversion dam | Concrete and embedded steel | The diversion dam will be removed to approximately El. 2453.5 ft. to be flush with the remaining bedrock. Remaining concrete will be covered with a minimum of 3.5 ft of Type E7b and E7c Erosion Protection and Riverbed Material. | Figure A-9 | | |

Table 2.3. Copco No. 2 Remaining Structures

| PROJECT STRUCTURE | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | | |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|--|
| | Wood Stave Penstock | | | | |
| Wood stave penstock and conveyance tunnels | Concrete footings Conveyance tunnels | The wood-stave penstock between Copco No. 2 dam and powerhouse will be deconstructed and the timber planks will be removed. The concrete footings will be buried in place by a minimum of 2 ft of Type E9 General Fill, and the slope will be graded to 0.5%. The tunnel portals connecting to the wood-stave penstock will be plugged by backfilling with Type E9 General Fill. A drain will be installed in the upstream conveyance tunnel (tunnel #1) by placing a non-woven geotextile wrapped drain in the bottom of the tunnel prior to backfilling, which will allow tunnel seepage without eroding the backfill material. The final grading of the tunnel portal swill be 2.5H:1V. A Type I drainage swale will be installed at each tunnel portal and in two locations along the former penstock span, and a stabilized berm will be placed downhill of the former penstock span, each leading to an energy dissipater. The disturbed area will undergo final stabilization as specified in Section 2.2.1 of this plan. | Figure A-10 | | |
| | | Powerhouse Penstock Surge Tank | | | |
| Powerhouse penstock surge tank | Below ground steel surge tank Steel plate barricades | The surge vent will be barricaded with 8 ft x 8 ft steel plates to prevent human access. A 3-inch by 12-inch opening will be cut into the surge vent barricade to allow bat access. | Figure A-11 | | |
| Overflow Spillway | | | | | |
| • Overflow spillway | Steel plate barricades Concrete spillway | The overflow spillway tunnel will be barricaded with steel plates cut to fit the opening and all remaining openings larger than 6" will be filled with grout or a concrete curb. The concrete spillway will remain in place. | Figure A-12 | | |

| PROJECT STRUCTURE | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | | | |
|--------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|--|--|
| | Powerhouse Penstock | | | | | |
| Powerhouse penstock | Concrete anchor blocks | All remaining concrete will be covered by a minimum of 2 ft of Type E9 General Fill. The outlet of the conveyance tunnel (discussed above) will be backfilled with Type E9 General Fill and covered with gravel mulch which is comprised of the courser limit of Type E4 Select Fill and washed of fines to qualify as a non-vegetative stabilization method allowing seepage through the barrier without eroding the backfill. The area will be graded to 2.5H:1V, and Type I drainage swales will be constructed along the penstock area parallel to the slope and along the uphill side of the disturbed area perpendicular to the slope. All disturbed areas will undergo final stabilization as specified in Section 2.2.1 of this plan. | Figure A-13 | | | |
| | | Powerhouse | | | | |
| Powerhouse | Powerhouse structure | Through consultation with the State of California as the successor landowner, the Copco No. 2 Powerhouse will remain in place and be transferred to the State of California for active maintenance and operation. | Figure A-14 | | | |
| | Tailrace Disposal Site | | | | | |
| Tailrace | To be Determined | The design for the placement of fill within the tailrace is currently being developed. | NA | | | |
| Intake Structure Disposal Site | | | | | | |
| Intake Structure | Concrete from intake Caterpillar gate | The caterpillar gate will be lowered, and a concrete plug will be poured against it. All remaining concrete and concrete rubble will be covered by a minimum of 2 ft of Type E9 General Fill and graded to 1.5H:1V (temporary), 2H:1V (permanent) slope to match final channel grade. The slope below the ordinary high water mark will be capped with Type E7b Erosion Protection. | Figure A-15 | | | |

Source: Knight Piésold 2022

| PROJE | | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | |
|------------------------------|---------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--|
| | | | Gate Shaft | | |
| Gate sh | naft | Concrete and embedded steel | The gate controlling the diversion tunnel will be removed to the level of the natural bedrock. All concrete and embedded steel below EI. 2,254.3 ft will remain in place. The gate shaft will be filled with Type E10 Random Fill or CR1 Concrete Rubble and then buried under a minimum of 3 ft of Type E9 General Fill graded to a maximum slope of 2H:1V. | Figure A-17 | |
| | | | Diversion Tunnel Intake Structure | | |
| Diversion tunnel in structur | ntake | Concrete base slab of the intake structure | The tunnel inlet will be plugged with Type E9a General Fill, CR1/CR2 Concrete Rubble, and/or E7a Erosion Protection to permanently block the tunnel opening. The fill will be covered with a minimum of 3.5 ft of cover material consisting of washed Type E9 General Fill, and the slope will be covered with a minimum of 3.5 ft of Type E7b Erosion Protection graded to a maximum slope of 2.5H:1V. | Figure A-18a | |
| | | | Diversion Tunnel Outlet Structure | | |
| Diversion tunnel of structur | outlet | Concrete apron of diversion tunnel | The diversion tunnel outlet will be plugged with Type E7a Erosion Protection and/or CR1/CR2 Concrete Rubble to permanently block the tunnel opening. The concrete apron of the diversion tunnel outlet structure will be left in place but will be modified as necessary to appear natural during the final grading activities. Any concrete portions of the outlet structure will be covered by a minimum of 3.5 ft of Type E7b Erosion Protection and graded to a maximum slope of 2.5H:1V. | Figure A-18b | |
| | Powerhouse Penstock | | | | |
| Powerh penstor | | Concrete anchor block #3 | The portion of the penstock that is already underground will be buried in place. All remaining concrete will be below the final grade and will be covered with Type E9 General Fill. | Figure A-19 | |

Table 2.4. Iron Gate Remaining Structures

| PROJECT STRUCTURE | MATERIAL TO REMAIN | PERMANENT MEASURES TO REDUCE WATER QUALITY IMPACTS | FIGURES | | |
|-----------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|--|
| | Penstock between anchor block #3 and powerhouse | | | | |
| | | Powerhouse and Tailrace Disposal Site | | | |
| Powerhouse and Tailrace | Concrete and embedded steel | Concrete and embedded steel below EI. 2186.33 ft will be backfilled using Type E9 General Fill, Type CR1 Concrete Rubble, and/or Type CR1/CR2 Concrete Rubble. The powerhouse area and tailrace will be graded to 2.5H:1V and covered with Type E9 General Fill or E7b Erosion Protection, depending on erosion potential. Riprap from the downstream face of the dam will be used to armor the areas within the river channel. Disposal site details are further elaborated in the California Waste Disposal Plan. | Figure A-20 | | |
| | Spillway Disposal Site | | | | |
| • Spillway | Earthen material from dam structure | The spillway will be backfilled with earthen material generated from the dam structure removal. The spillway area will be graded to a slope range of 2.5H:1V to 5H:1V. The earthen material will be covered by Type E9 General Fill and E7a/E7b Erosion Protection will be placed on the downstream toe of the spillway. Disposal site details are further elaborated in the California Waste Disposal Plan. | Figure A-21 | | |

Source: Knight Piésold 2022

3.0 Reporting

By April 1 and April 15 of each year, the Renewal Corporation will prepare and submit to the California State Water Resources Control Board and the Federal Energy Regulatory Commission, respectively, an Annual Report which will include information pertaining to implementation of the California Remaining Facilities Plan.

4.0 References

AECOM. 2019a. Copco No. 1 Development, Hazardous Building Materials Survey. April.

- AECOM. 2019b. Copco No. 2 Development, Hazardous Building Materials Survey. April.
- AECOM. 2019c. Iron Gate Development, Hazardous Building Materials Survey. April.
- Entek. 2020a. Hazardous Materials Survey Final Report for Copco No. 1 Development. October.
- Entek. 2020b. Hazardous Materials Survey Final Report for Copco No. 2 Development. October.
- Entek. 2020c. Hazardous Materials Survey Final Report for Iron Gate Development. October.
- Knight Piésold. 2022. 100% Design Completion Drawings. Prepared for the Klamath River Renewal Project. June.

Appendix A

Figures