UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Klamath River Renewal Corporation **Project No. 14803-001**

LICENSE SURRENDER ORDER
LOWER KLAMATH PROJECT

Construction Management Plan

December 2022

KLAMATH
RIVER RENEWAL
CORPORATION

Lower Klamath Project
FERC Project No. 14803

Construction Management Plan

Klamath River Renewal Corporation
2001 Addison Street, Suite 317
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December 2022

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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 Order (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 Construction Management Plan describes measures the Renewal Corporation will implement as part of the Proposed Action construction phase, specifically, measures related to traffic management, emergency response, air quality, disposition of Bureau of Land Management (BLM) lands, and construction camps.

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. Additional consultation with Siskiyou County will be conducted.

The LSO Ordering Paragraph (S) approves the Construction Management Plan as filed on December 14, 2021 and supplemented on April 18, 2022. The Renewal Corporation now submits limited modifications to this approved plan as stated in Table 2-2. These modifications comply with the four requirements in Ordering Paragraph (S); include refinement in means and methods due to further consultation with the U.S. Bureau of Land Management; and reflect updates to the Memoranda of Understanding with Klamath and Siskiyou Counties and the

construction drawings as included in the Renewal Corporation's June 2022 filing of its Final Construction Documents[1]. Table 2-2 herein shows the material modifications to the approved version of this Construction Management Plan. An updated Consultation Record for the Construction Management Plan is included as Appendix G.

[1] eLibrary accession number 20220630-5018

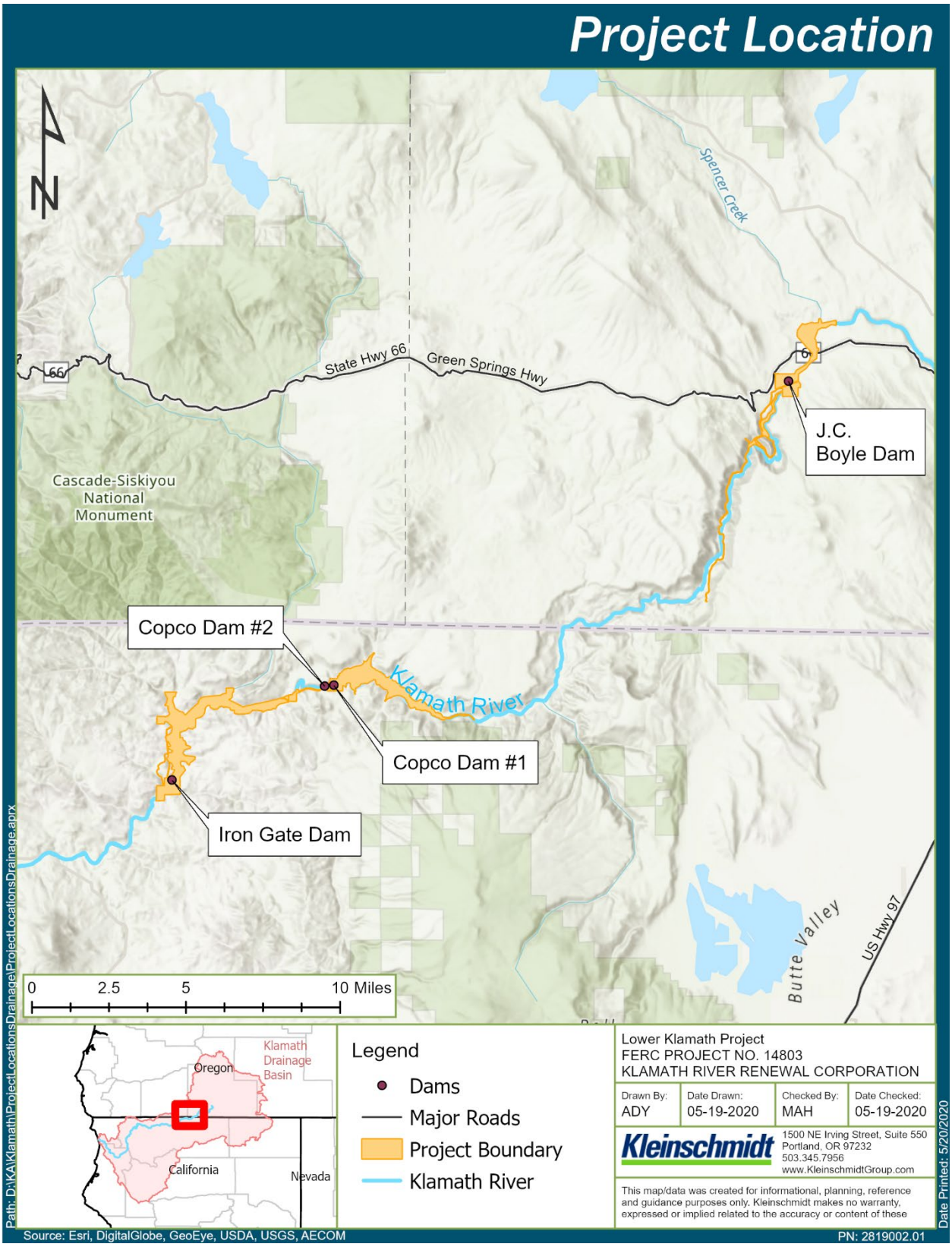

Figure 1-1. Lower Klamath Project Location

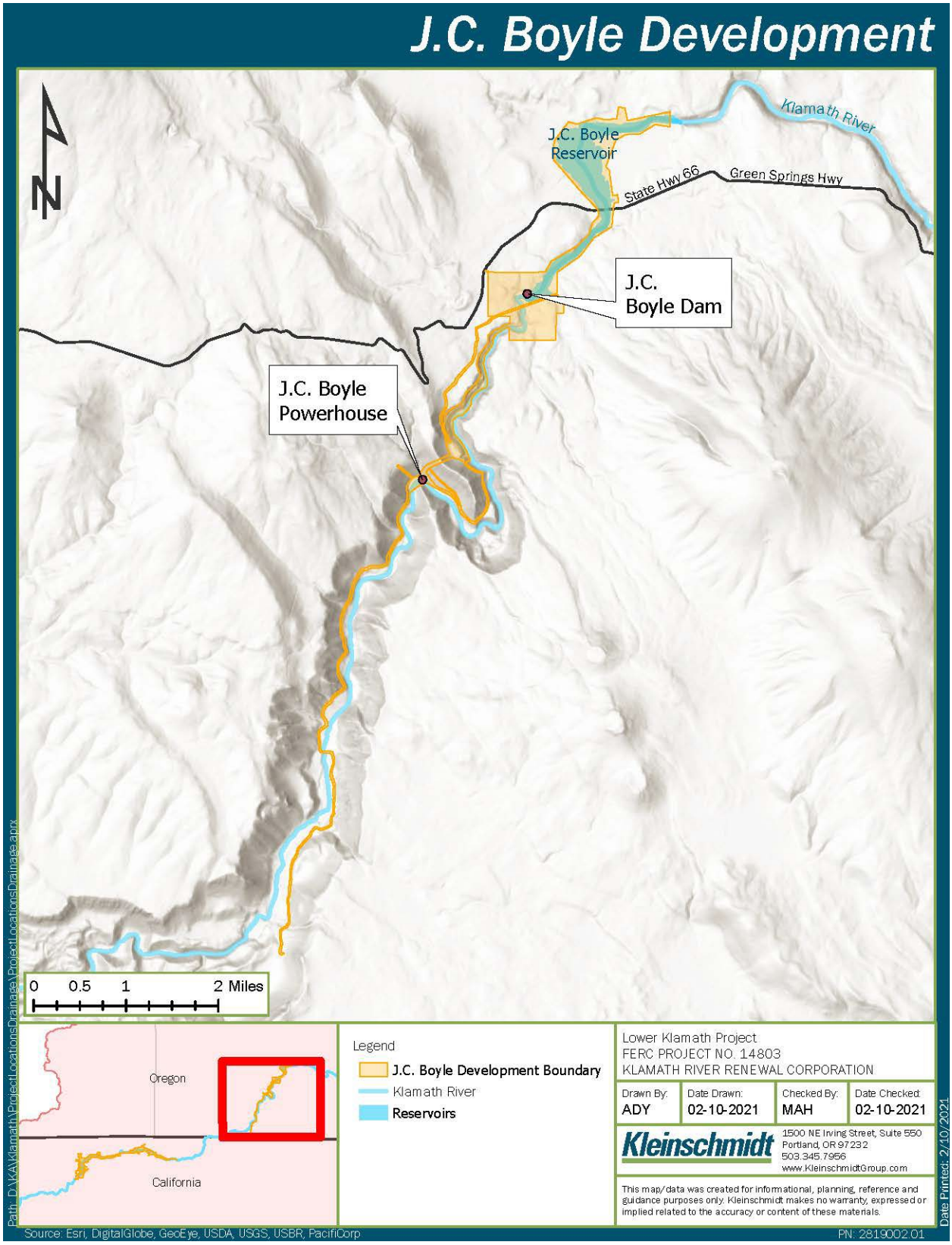

Figure 1-2. J.C. Boyle Development Facility Details

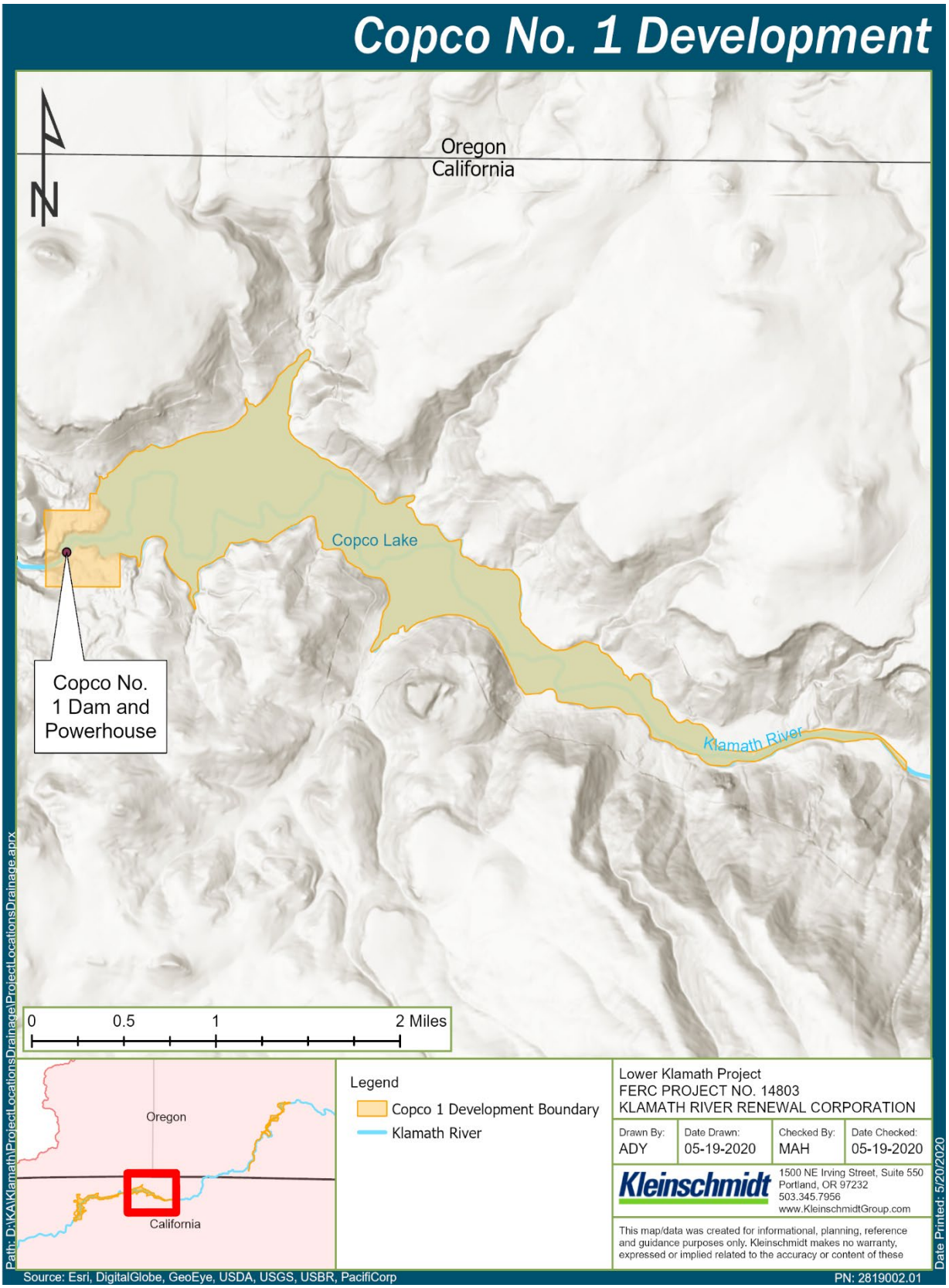

Figure 1-3. Copco No.1 Development Facility Details

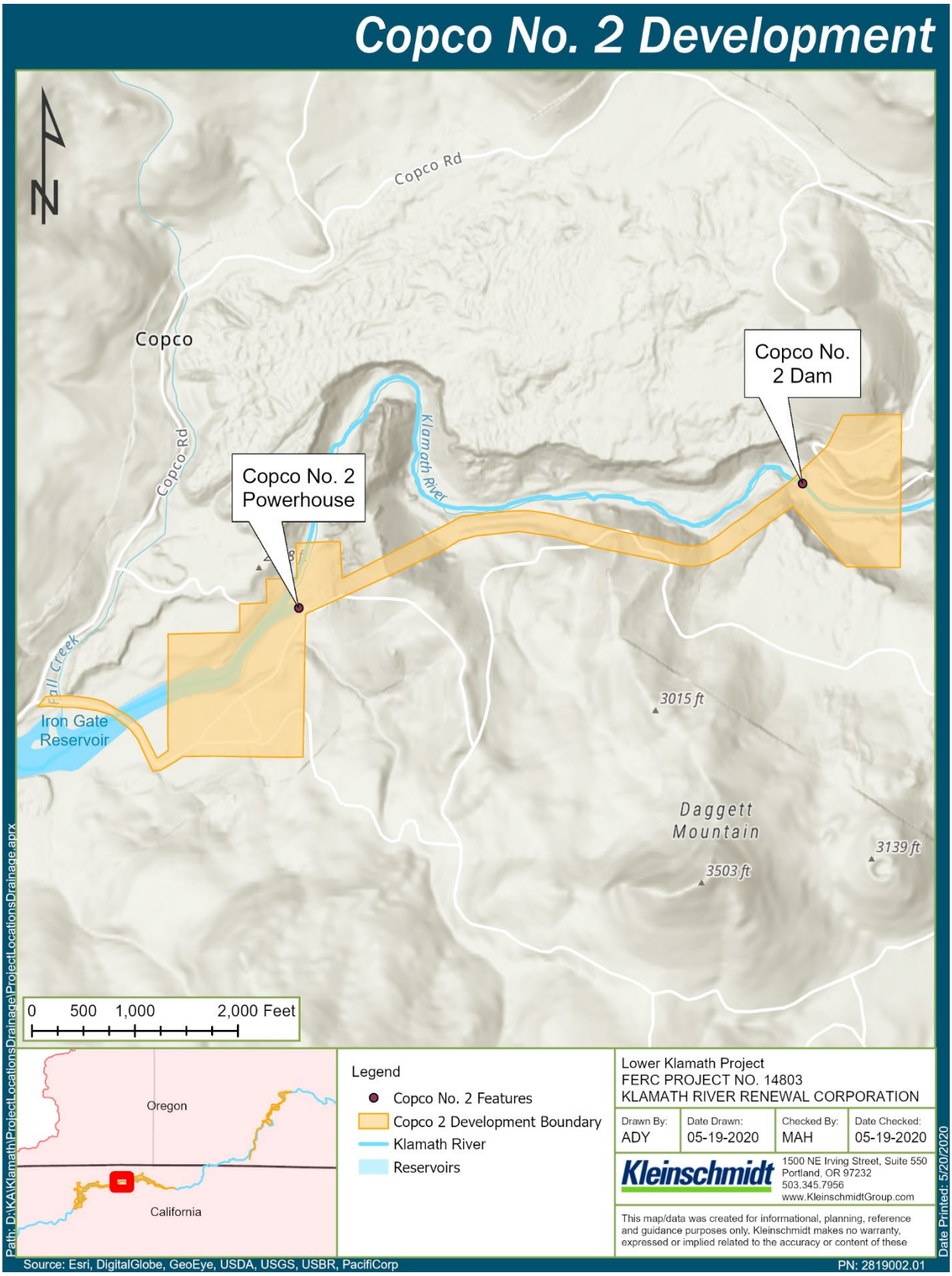

Figure 1-4. Copco No.2 Development Facility Details

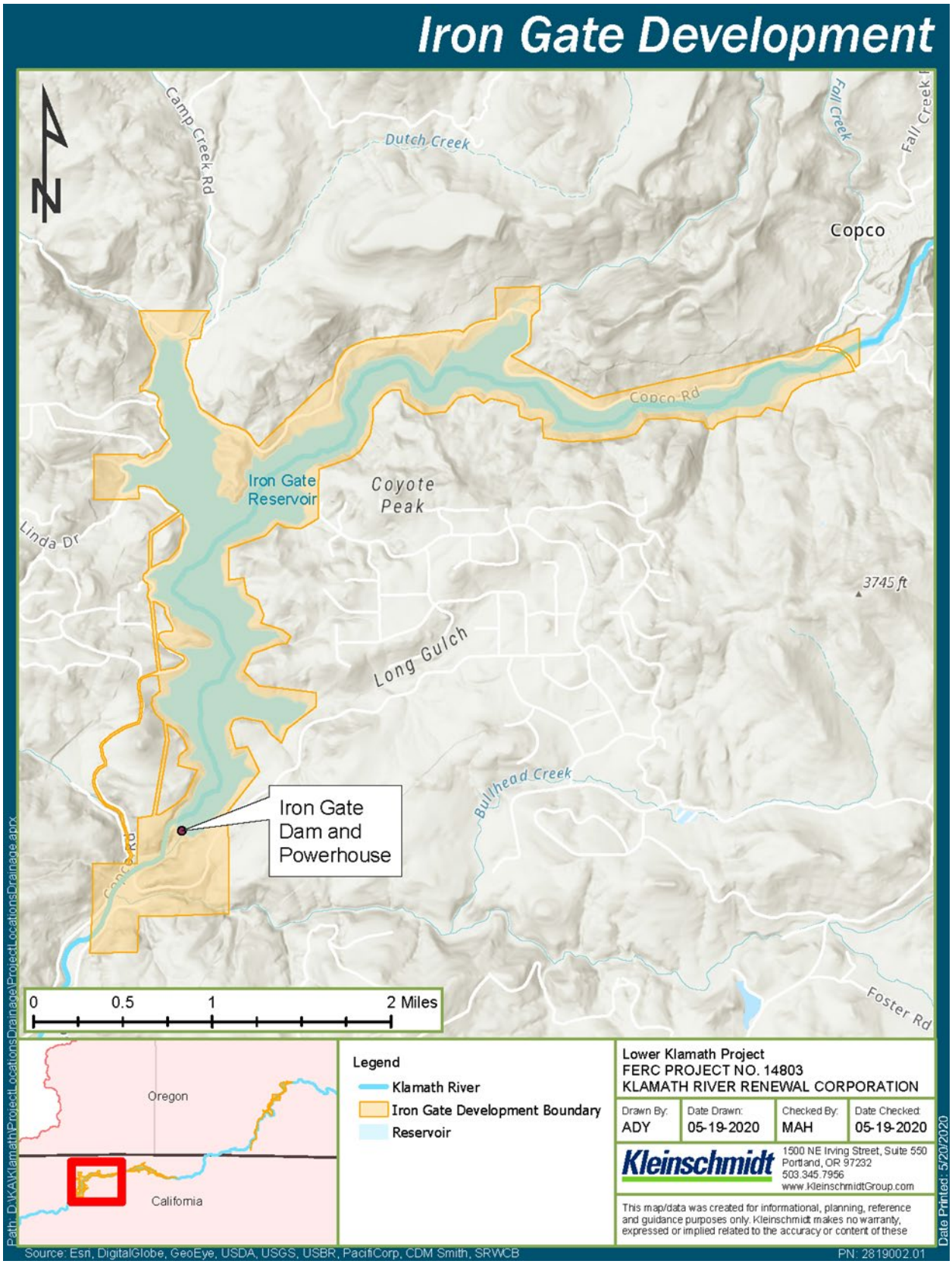

Figure 1-5. Iron Gate Development Facility Details

2.0 Regulatory Context

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

Table 2-1. Lower Klamath River Management Plans

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

2.1 Organization Structure

This Construction Management Plan describes measures the Renewal Corporation will implement as part of the Proposed Action construction phase, including measures related to traffic management, emergency response, disposition of BLM lands, and construction camps. Specifically, the Construction Management Plan includes an updated Consultation Record and six sub-plans, included amongst the Appendices identified below.

- Appendix A Oregon Traffic Management Plan
- Appendix B California Traffic Management Plan
- Appendix C Emergency Response Plan
- Appendix D Use and Occupancy Plan for Bureau of Land Management Lands
- Appendix E Construction Camp Plan
- Appendix F Air Quality Management Plan
- Appendix G Consultation Record

2.2 Specific Regulatory Interests

The Renewal Corporation considered the following regulatory interests in the development of the Construction Management Plan:

- Klamath County Memorandum of Understanding

- California Department of Fish and Wildlife Memorandum of Understanding
- Siskiyou County Memorandum of Understanding
- California Environmental Quality Act, Final Environmental Impact Report
- Bureau of Land Management Resource Management Plan, Klamath Falls and Redding Districts
- 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.

Table 2-2. Modifications to the Approved Plan

SUB-PLAN	MODIFICATIONS
Appendix A: Oregon Traffic Management Plan	• No material modifications.
Appendix B: California Traffic Management Plan	• No material modifications.
Appendix C: Emergency Response Plan	• No material modifications.
Appendix D: Use and Occupancy Plan for Bureau of Land Management Lands	• Updated general coordination requirements, responsibilities, and procedures to be followed in accordance with the Bureau of Land Management (BLM) during implementation of the Proposed Action in Oregon and California. • Added monitoring requirements and performance metrics for native and invasive species coverage for specific Oregon BLM interests. • Added conditions for the coordination, timing, and type of invasive exotic vegetation treatment to be performed for Oregon BLM interests.
Appendix E: Construction Camp Plan	• Added language clarifying the proposed location for Copco Village and removed reference to the previously identified alternative sites.
Appendix F: Air Quality Management Plan	• This subplan is being submitted to comply with the requirements in LSO Ordering Paragraph S.

2.4 Regulatory Approval

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

3.0 Reporting

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

Appendix A

Oregon Traffic Management Plan

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project
FERC Project No. 14803

Oregon Traffic Management Plan

Klamath River Renewal Corporation
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December 2022

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1.0 Introduction

The Oregon Traffic Management Plan described herein is a subplan of the Construction Management Plan that will be implemented as part of the Proposed Action for the Lower Klamath Project.

1.1 Purpose of Oregon Traffic Management Plan

The purpose of the Oregon Traffic Management Plan is to describe the measures the Renewal Corporation will implement to maintain efficient and safe movement of vehicles throughout the construction zones and construction activities at the J.C. Boyle facility. This Oregon Traffic Management Plan will prevent unreasonable traffic delays and maintain acceptable levels of service, traffic circulation, and safety on state, county, and private roadways used during construction at the J.C. Boyle Development.

When public outreach is required, the Renewal Corporation will coordinate with the public to ensure that local environmental justice communities are included in emergency planning. Public outreach communication will be in English, Spanish, and Hmong.

2.0 Work Activities

2.1 Implementation

Renewal Corporation construction personnel at the J.C. Boyle Development will receive an initial orientation describing the details of this Oregon Traffic Management Plan. All related training will be documented by the Kiewit safety adviser.

The Oregon Traffic Management Plan will be updated as needed if additional risk areas are encountered or to improve best management practices.

2.2 Reporting

Inspection and reporting procedures will be followed consistent with the Renewal Corporation's discussions with Klamath County.

The Renewal Corporation will investigate public roads that may be potentially impacted by the Proposed Action. The Renewal Corporation will prepare and provide the County with a summary report of existing conditions of such public roads and identify repairs that are needed to maintain the efficient and safe movement of construction traffic.

The condition of existing road(s) that may be impacted by construction traffic will be inspected bi-annually by the Renewal Corporation (spring and fall) and a report will be completed.

Following construction, the Renewal Corporation will complete a final road condition inspection and report which will be used to determine the need for repairs.

2.3 ESAL Calculations

Based on Equivalent Single Axle Load (ESAL) calculations, an estimate of degradation to Klamath County rural, state highways, and interstate highways associated with the J.C. Boyle area is shown in Table 2-1. A calculation summary sheet is provided in Appendix A.

Table 2-1. ESAL Comparisons for Klamath County Roads

ROAD TYPE	EXISTING ESALS	ESALS DURING CONSTRUCTION	INCREASE IN NORMAL LOADING (%)
Rural Roads[(1)]	29,439	63,626	116
State Highways (Hwy 66)	72,486	106,673	47
Interstate Highway (Hwy 97)	6,220,885	6,255,072	1

[1] Based on Topsy Grade Road traffic data.

3.0 Site Access and Traffic

3.1 Construction Access Improvements

The Renewal Corporation will provide adequate access and haul routes associated with the J.C. Boyle construction. An Overview Map is presented in Figure 1, Appendix B. Potential roadway and access improvements are provided in Table 3-1 below. The temporary access improvements are necessary to provide access to multiple portions of the Proposed Action area.

Table 3-1. Potential Roadway and Access Improvements

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS	ROAD REHABILITATION
Green Springs Highway (OR 66)	None			
Spencer Bridge	Monitor post-drawdown for a 2- year period for potential erosion or scour at the bridge embankments and intermediate piers		X	
Keno Access Road	None			

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS	ROAD REHABILITATION
Keno Worden Road	None			
Topsy Grade Road	Potential road surface rehabilitation during or post-Proposed Action			X
J.C. Boyle Dam Access Road from OR 66	Regrading uneven or rutted areas	X		
Junction of OR 66 and J.C. Boyle Dam Access Road (Intersection 2)	Intersection widening	X		
	Tree removal	X		
	Signage	X		
	Fence relocation and cut back slope to increase line of sight	X		
J.C. Boyle Powerhouse Access Road from OR 66	Regrading uneven or rutted areas, installation of 2 pullouts, and replace existing culvert	X		
Junction of OR 66 J.C. Boyle Powerhouse Access Road (Intersection 1)	Intersection widening	X		
	Tree removal	X		
	Signage	X		
J.C. Boyle Powerhouse Access Road at scour hole	Cut back of west slope to relocate the road away from scour hole	X		
North Access Road from OR 66 (Intersection 3)	Intersection widening	X		
	Tree removal	X		
	Signage	X		
North Access Road (from OR 66)	Regrading uneven or rutted areas	X		
Timber Bridge at Klamath River	Remove post-Proposed Action completion	X		
J.C. Boyle Power Canal Access Road	None – modify into walking trail	X		
Unnamed Roads adjacent to Dam	Regrading	X		

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS	ROAD REHABILITATION
	Minor widening			

Notes:

Source: Information provided by Knight Piésold (2022a)

1. Sediment and erosion control measures for public access roads are included in an NPDES DEQ Stormwater Construction Permit 1200-C
2. Road rehabilitation consists of aggregate base to repair road base and final grading rough road sections.

3.2 Access to Site

Figure 1 in Appendix B shows access roadways to the J.C. Boyle site and Table 3-2 distinguishes between public and private roadways. The two staging areas for construction works at the J.C. Boyle Dam will be accessed from the South. From the South, access, mobilization, and material hauling for the J.C. Boyle Development will occur via the J.C. Boyle Dam Access Road regionally accessed through Topsy Grade Road. The Proposed Action will not affect the culvert on Topsy Grade Road at unnamed creek therefore no monitoring is expected to be required. A left abutment access road will be built and connected to Topsy Grade Road to be used to convey excavated embankment fill to the left bank disposal area. From the North, construction access to the J.C. Boyle Dam site will be via J.C. Boyle Dam Access Road (Intersection 2) and the North Access Road (Intersection 3) from OR 66 to the J.C. Boyle Facility.

The J.C. Boyle Powerhouse Access Road is the primary access route to the powerhouse area and the staging area adjacent to the powerhouse. The J.C. Boyle Power Canal Access Road is the primary access route to the power canal and the two staging areas adjacent to the forebay area. These two roads are accessed via OR 66. Both roads will require temporary maintenance during construction to ensure accessibility and both roads will be left in place after construction. The J.C. Boyle Power Canal Access Road will be used for construction access until the power canal work has been complete. At the powerhouse and penstock area of the J.C. Boyle Development, Kiewit will improve temporary access roads for construction access to the penstock and penstock anchor block and the roads will be left in place after the work is complete.

Table 3-2. Roadway Jurisdiction

ROAD	PUBLIC	PRIVATE
I-5	X	
OR 66	X	
Topsy Grade Road	X	
J.C. Boyle Dam Access Road		X

Access Road from OR 66 to J.C. Boyle Dam Access Road (Intersection 2)		X
Access Road from OR 66 to J.C. Boyle Powerhouse Access Road (Intersection 1)	X	
Access Road from OR 66 to North Access Road (Intersection 3)		X
Unnamed Roads adjacent to Dam		X
J.C. Boyle Powerhouse Access Road		X
J.C. Boyle Power Canal Access Road		X

3.3 Existing Site Road and Traffic Characteristics

Consistent with the Renewal Corporation's discussions with Klamath County, the Renewal Corporation will perform an existing conditions assessment of roads to be utilized. In July 2019, a visual inspection of the roads in the J.C. Boyle area was completed (Knight Piésold, 2022b). The road inspection covered surface types, the frequency and severity of distresses, and listed the road conditions either as good (e.g., like new, structurally sound, and functionally adequate), fair (e.g., some deterioration, but structurally sound and functionally adequate) or poor (e.g., significant deterioration, requiring maintenance or repair). Table 3-3 below provides a summary of the road conditions inspected in 2019.

Table 3-3. Roadway Conditions

ROAD	DESCRIPTION
OR 66 (from I-5 to US 97)	The road surface consists of asphalt and is in good condition.
Keno Worden Road (from OR 66 to US 97)	The road surface consists of asphalt and is in good condition.
Topsy Grade Road (from OR 66 to J.C. Boyle Dam Road	The road surface consists of an aggregate based road surface and is in good condition. A small portion of the road consists of hot mix asphalt near the Topsy Grade Campground.
J.C. Boyle Access Road	The road surface consists of an aggregate base road surface and is in fair to good condition.
J.C. Boyle Power Canal Road	The road surface consists of an aggregate base road surface and is in fair to good condition.
J.C. Boyle Powerhouse Access Road	The road surface consists of an aggregate base road surface and is in fair to good condition.

The J.C. Boyle facility is located in a rural area and roadways have low traffic volumes. Estimated traffic counts for existing roads in the regional area from the Oregon Department of Transportation and Caltrans are provided in Table 3-3. Construction related traffic counts per lane direction on Topsy Grade Road, OR 66, and US 97 in Oregon are provided in Table 3-4.

Table 3-4. Estimated Traffic Counts for Existing Conditions

ROAD SEGMENT	AADT	AADT DISTRIBUTION (%)[1]			AADT DISTRIBUTION			PHT DISTRIBUTION[3]			PHT DISTRIBUTION FOR EACH DIRECTION[4]		
		AUTO[2]	MEDIUM TRUCKS[2]	HEAVY TRUCKS[2]	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS
Topsy Grade Rd[5]	200	58.82	34.85	6.33	118	70	13	12	7	2	6	4	1
OR 66	500	58.82	34.85	6.33	294	174	32	29	17	3	15	9	2
US 97	6,300	33.55	28.34	38.11	2,114	1,785	2,401	211	179	240	106	90	120

Notes:

Source: US DOI and CDFW, 2012

1. AADT distribution percentage provided by transportation engineers (J. Key, personal communication, December 13, 2010).
2. TNM vehicle classification: Auto = cars and light duty trucks, Medium Trucks = cargo vehicles with two axles and six tires; Heavy trucks - cargo vehicles with three or more axles. 3 PHT assumed to be 10% of AADT based on a review of published Caltrans and ODOT traffic counts (ODOT, 2010; Caltrans, 2010).
3. PHT for each direction assumed to be the same in both direction of traffic.
4. Traffic count estimated from field observations (CDM, field observations, October 17, 2010). 6 AADT at MP 48.73, 0.02 mile east of Hamaker Mountain Road (ODOT, 2010).
5. AADT at MP 273.92, 0.30 mile south of Nevada Avenue Interchange (ODOT, 2010).

Table 3-5. Estimated Peak Hour Traffic Counts per Direction

ROAD SEGMENT	DIRECTION	EXISTING CONDITIONS[1]			DURING CONSTRUCTION		
		Auto[2]	Medium Trucks[2]	Heavy Trucks[2]	Auto	Medium Trucks	Heavy Trucks[3]
Topsy Grade Road[4]	North	6	4	1	6	4	5
	South	6	4	1	51	4	1
OR 66[4]	East	15	9	2	15	9	6
	West	15	9	2	60	9	2
sUS 97[4]	North	106	90	120	106	90	124
	South	106	90	120	151	90	120

Notes:

Source: Information provided by the Renewal Corporation (2020)

1. See Existing Conditions table for PHT distribution references.
2. TNM vehicle classification: Auto = cars and light duty trucks, Medium Trucks = all cargo vehicles with two axles and six tires; Heavy trucks - all cargo vehicles with three or more axles.
3. All haul trucks assumed to be Heavy Trucks (3 axles or more).
4. Workers for J.C. Boyle assumed to travel from Klamath Falls. Maximum number of construction workers for J.C. Boyle added to the Auto category for Topsy Grade Road, OR 66, and US 97

3.4 Construction Work Hours

Activities at the J.C. Boyle Development, including the arrival and departure of vehicles delivering or removing materials from or to the site, will be 24 hours a day, seven days a week.

3.5 Traffic Control Site Manager

At the J.C. Boyle facility, the Traffic Control Site Manager is the Kiewit Project Director. The Traffic Control Site Manager will be responsible for:

- Ensuring all traffic control measures are being carried out effectively and are in accordance with the approved plans,
- Conducting routine inspections and auditing traffic control measures,
- Revisiting the traffic control plans and adapting new measures in consultation with the County as the work progresses,
- Monitoring and determining if any additional road improvements are needed or if modifications to traffic management operations are needed, implement such improvements or modification in consultation with the County. The Renewal Corporation will monitor and make necessary improvements and/or repairs to roadway issues that pose site access and or safety concerns. The Renewal Corporation will consult with the County with regard to these repairs, as per the Memorandum of Understanding.
- Maintaining communication with all appropriate agencies, including but not limited to the Klamath County Police and Klamath County on traffic control measures for the J.C. Boyle Development, and

- Implementing traffic control awareness and conduct safety and logistics toolbox talks to personnel.

3.6 Roads Authority

The roads authority for non-private roads in the Proposed Action area is the Oregon Department of Transportation (ODOT), Klamath County, and the Bureau of Land Management (BLM).

3.7 Access Points and Site Security

The J.C. Boyle dam area is protected on all sides by a chain link fence with barbed wire. Road access to the facility will be controlled by manned guard shacks with pipe gates and unmanned pipe gates as shown in Figure 1 in Appendix B.

3.8 J.C. Boyle Facility Users

An average workforce of 80 to 100 people is needed by the Renewal Corporation for the pre- and post-reservoir drawdown construction activities at the J.C. Boyle Development. The peak workforce required during excavation may reach 125 people. The estimated equipment that will be used for the removal of the dam and other facilities pre- and post-drawdown at the J.C. Boyle Development are shown in Table 3-5.

Table 3-6. Estimated Equipment at the J.C. Boyle Development

EQUIPMENT TYPE
Crawler-mounted lattice boom crane, 100 to 120 ton or 150 to 200 ton, 160- to 200-foot boom
Rough terrain hydraulic crane, 35 to 75 ton
Hydraulic track excavators, 65,000 to 120,000 lb, with Cat H120 hoe-ram, thumb, and sheer attachments
Cat 966 (52,000-lb, 5-cy bucket) or Cat 988 (65,000-lb, 6-cy bucket) articulated wheel-loaders
Cat 725, Cat 730, or Cat 740 articulated rear dump trucks, 30 ton (22 cy)
D-6, D-7, D-8, or D-9 standard crawler dozers
Front-end wheel loader, integrated tool carrier, 25,000 lb
Cat TL943 rough terrain telescoping forklift
Rough terrain telescoping manlift
Truck-mounted seed sprayer, 2,500 gallons
On-highway, light duty diesel pickup trucks, ½-ton and 1-ton crew
On-highway flatbed truck with boom crane, 16,000 lb
On-highway truck tractors, 45,000 lb
Off-highway water tanker, 5,000 gallons

EQUIPMENT TYPE
Engine generators, 6.5 kW to 40 kW, diesel or gasoline
Air compressors, 100 psi, 185 to 600 cfm, diesel
Hand-held drilling, cutting, and demolition equipment
Portable welders and acetylene torches
4-inch submersible trash pumps, electric

Notes: Source: Information provided by the Renewal Coporation (2020)

3.8.1 Construction Users

Construction personnel at the J.C. Boyle Development will arrive on site at approximately the same times every workday to maintain efficiency and reduce unexpected traffic. Construction personnel will arrive at the staging area and are permitted to be at site during the construction hours. An estimated 80 to 100 vehicles associated with construction personnel will be on site daily and all vehicles must be parked in the designated parking locations within the staging areas.

Vehicle trips will be required to transport waste material from the J.C. Boyle Development for on-site and off- site disposal. Estimated quantities of materials generated during removal of J.C. Boyle Dam and Powerhouse, numbers of truck trips, and approximate haul distances for waste disposal are shown in Table 3-6.

Table 3-7. Estimated Volume of Waste Material from Removal of J.C. Boyle Facilities

WASTE MATERIAL	IN-SITU QUANTITY	BULK QUANTITY	DISPOSAL SITE	QUANTITY PER TRIP	TOTAL TRIPS
Dam Embankment - Earth	180,000CY	198,000CY	On-site - left and right banks upstream of the dam	40CY/Trip (unpaved road)	5,000 Trips (1-miles RT)
Powerhouse Tailrace - Earth	11,000CY	13,000CY	On-site powerhouse tailrace	N/A	On-site disposal
Dam - Concrete	3,440 CY	4,470 CY	On-site scour hole	40CY/Trip (unpaved road)	110 trips (4 miles RT to scour hole)
Power Canal and Forebay Concrete (Option 1)	23,000CY	29,900CY	On-site scour hole		750 trips (2 miles RT)
Powerhouse and Miscellaneous	400 CY	520 CY	On-site tailrace		On-site Disposal

WASTE MATERIAL	IN-SITU QUANTITY	BULK QUANTITY	DISPOSAL SITE	QUANTITY PER TRIP	TOTAL TRIPS
foundation concrete					
Dam Mech/Elec	440 tons		Salvaged, or landfill near Klamath Falls, or alternative permitted site	25 tons/trip (via Highway 66)	20 trips (44 miles RT)
Power Canal Mech/Elec	270 tons	--			10 trips (48 miles RT)
Powerhouse Mech/Elec	11,210 tons				50 trips (52 miles RT)
Timber Bridge	60 CY		Rock disposed on site; sheet piles, treated wood disposed off-site at permitted site	40CY/Trip (unpaved road)	2 trips (up to 52 miles RT)
Building Material Debris	10 buildings 17,300 ft^2		Landfill near Klamath Falls or alternative permitted site	25 tons/trip (Highway 66)	20 trips (44 miles RT)
Power Lines	2.9 miles of 12-kV and 230 kV lines				

Notes:

Source: Information provided by the Renewal Corporation (2020) CY – Cubic yards
RT – Round trip

3.8.2 Reservoir Operational Staff and Contractors

Reservoir operational staff and contractors will access the J.C. Boyle Development from the South via Topsy Grade Road. The J.C. Boyle powerhouse will be accessed through the J.C. Boyle Powerhouse Access Road. Two to six PacifiCorp personnel will be on site, depending on substation and transmission related activities.

3.8.3 Oversized and Heavy Vehicle Access

Drivers of oversized and heavy vehicles will be required to exercise conservative and defensive driving and follow all vehicle movement plans and site traffic rules. Drivers that do not comply with these rules will be dismissed. Oversized and heavy vehicles will access the J.C. Boyle Development from the South via Topsy Grade Road and will access the facility from the North via the North Access Road from OR 66 to J.C. Boyle Dam. Oversized and heavy vehicles will travel on the J.C. Boyle Powerhouse Access Road and the J.C. Boyle Power Canal Access Road. Oversized and heavy vehicles will not use the Timber Bridge on the private road (located

just downstream of the J.C. Boyle dam) at Klamath River. A map showing access roads at the J.C. Boyle Facility is provided in Figure 1 in Appendix B.

3.9 Adjoining Private Property Access

Access to and from private property will be maintained at all times. If access to private property need to be temporarily limited, the Renewal Corporation will make these arrangements in advance with the effected private property owner. The Renewal Corporation will coordinate improvements at the intersections of OR 66 with Green Diamond Resource Company and applicable private residences. There are no school zones within the work area. Renewal Corporation personnel will not use Topsy Grade Road beyond the J.C. Boyle Development access point.

3.10 Roadway Closures

There are no planned roadway closures during construction at the J.C. Boyle facility.

3.11 Temporary Roadways and Works

The Renewal Corporation will provide roadway maintenance on Topsy Grade Road including aggregate base, vegetation management, noxious weed control, replacing signs, dust control, pothole repair, snow plowing, and drainage/culvert repairs. The roadway will be left in place after construction. The Renewal Corporation will conduct minor road widening and tree removal at the intersections off of OR 66. The Renewal Corporation will provide temporary advance warning signs at this intersection to notify the public of trucks entering/exiting OR 66 at the intersections. No temporary traffic control will be used during construction and the road will be left in place post-construction.

The J.C. Boyle Powerhouse Access Road and the J.C. Boyle Power Canal Access Road are the primary construction access routes to the J. C. Boyle powerhouse, penstock, and power canal facilities. The Renewal Corporation will realign the J.C. Boyle Powerhouse Access Road around the existing scour hole. These roads are accessed via OR 66. The Renewal Corporation will provide temporary maintenance of both roads during construction to maintain accessibility during construction and both roads will be left in place after construction. These two roads will be bi-annually (spring and fall) inspected by the Renewal Corporation for maintenance and construction improvements. At the powerhouse and penstock area of the J.C. Boyle Development, four short access roads will be rehabilitated by the Renewal Corporation as needed for construction access to the penstock area.

3.12 Traffic Control Personnel

The Renewal Corporation will require that flaggers are a Certified Flagger in Oregon. All traffic control personnel will be required to follow the applicable requirements in the ODOT Oregon Standard Specifications for Construction (2021 - https://www.oregon.gov/ODOT/Business/Pages/Standard_Specifications.aspx). The Renewal Corporation's contractor will confirm that flaggers are able to satisfactorily demonstrate the following abilities:

- Ability to receive and communicate specific instructions clearly, firmly, and courteously,
- Ability to move and maneuver quickly to avoid danger from errant vehicles,
- Ability to control signaling devices (such as STOP/SLOW paddles) to provide clear and positive guidance to drivers approaching a work zone in frequently changing situations,
- Ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations,
- Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury, and
- Flaggers will be 18 years of age or older.

3.13 Signage

The Renewal Corporation will implement the following measures with respect to signage. Roadway signs will be used to inform the public where any road changes from construction works. Advanced warning signs (e.g., road work ahead, shoulder work, workers, etc.) will be used to indicate the type of work or activity the driver can expect. Sign spacing and placement will be in accordance with Oregon state law; spacing requirements per posted road speed are shown in Table 3-7. Signboards and variable message signs will be used as needed and will be placed at each end of access road used.

Table 3-8. Sign Spacing

POSTED SPEED (MPH)	SPACING BETWEEN SIGNS (FEET)
20	100
25	
30	
35	350
40	
45	500
50	
55	

Notes:

Source: ODOT, 2011
Adjust spacing as field conditions require; Small adjustments to sign spacing may be made to fit field conditions, but spacing will not exceed 1.5 times the dimensions shown.
If sign spacing needs to be adjusted, keep all the sign spacing distances similar to maintain driver expectancy

3.14 Monitoring of Traffic Control Measures

During each stage of construction at the J.C. Boyle Development, the Renewal Corporation will check daily all signs and required traffic control measures for compliance with the Oregon Traffic Management Plan.

3.15 Road Design

The Renewal Corporation will implement the following measures with respect to road design. All road designs will account for current traffic configuration, road safety, and traffic network impacts. All road designs will meet applicable safety, engineering, and design guidelines. The following road design criteria will be used for the design of temporary access roadways:

- Single-lane road, 15 ft wide with one 3-ft-wide safety berm,
- Safety berm when road segment is exposed to side slope,
- 35-foot minimum curve radius, and
- 15% maximum road grade.

An exception was made for portions of the lower penstock access road in which the maximum road grade was increased in some sections to minimize slope cuts.

4.0 Traffic Control Locations

Areas of traffic control have been identified for the J.C. Boyle Development as shown in Figure 1 in Appendix B. Traffic control measures to be provided by the Renewal Corporation in these areas are discussed below and will be updated as required.

The Renewal Corporation will provide temporary traffic control and warning signs to notify the public of construction works and flaggers equipped with warning signs for the removal of the Pioneer Park West and Pioneer Park East.

5.0 Site Traffic Rules

5.1 Site Speed Limits

The Renewal Corporation will implement the following measures with respect to speed limits. Signage indicating the appropriate speed limits will be posted on all roadways and all personnel are required to follow the speed limits at the J.C. Boyle Development. The speed limit of OR 66 is 35 to 45 mph, 15 mph on Topsy Grade Road, 35 mph on Keno Worden Road, and I-5 has a speed limit of 70 mph. On all other roads in the J.C. Boyle area, the speed limit is 15 mph unless otherwise posted. When roadways are shutdown to public access, speed limits for haul trucks will be established based on Kiewit's best practices and safety guidelines. Speed limits will be evaluated for effectiveness and adjusted to maintain and prioritize safety during construction works.

5.2 Access Roads/Haul Roads

The Renewal Corporation will implement the following measures with respect to access and haul roads. All personnel on site will be instructed to only use the access and haul roads and avoid traveling off the existing roadways, or on the shoulders of the road. Roadways will be delineated with markings such as windrows, bunting, or flagging. Within the JC Boyle site,

certain roadways currently available to the public may be shutdown for safety during periods of heavy hauling. Haul roads will be constructed with the following design:

- Appropriate geotechnical materials will be used for all road construction,
- Bends, corners, and turns will be constructed to maintain equipment stability during regular use, and
- Haul roads will comply with Kiewit requirements and recommendations and will be inspected regularly.

5.3 Maximum Loads

The Renewal Corporation will implement the following measures with respect to maximum loads. Trucks will be loaded with a safe load distribution to avoid spillage and will follow weight restrictions: ORS 810.030. The driver must be in the vehicle throughout the loading process. Oversized, heavy vehicles, and vehicles with large loads will not cross the Timber Bridge at Klamath River.

5.4 Parking

The Renewal Corporation will implement the following measures with respect to parking. Parking will be restricted to specific designated areas as determined as the work progresses and will be chosen to avoid close proximity to existing waterways. All construction personnel will park in designated staging areas.

Private vehicles will be allowed to park only in designated parking areas and are not allowed on the construction site unless approved by the Kiewit Project Manager. If approved on site, private vehicles will adhere to all instructions and safety requirements designated in the Oregon Traffic Management Plan. If traveling through or to any operational areas, private vehicles will be escorted.

There are public access roads adjacent to the J.C. Boyle construction site. Public access will be maintained on these access roads.

6.0 Requirements for Site Access

6.1 Personnel

All personnel entering the J.C. Boyle Development are required to attend and complete an Induction (see Section 7.2). These Inductions must be scheduled in advance and will not be available on demand. Visitor inductions can always be arranged but require an inducted escort when at the site. Access to the site during non-regular hours can be gained through contact with Kiewit.

6.2 Light Vehicles

All light vehicles will follow all rules and regulations of this Oregon Traffic Management Plan. Light vehicles entering the Construction Works area are required to have a reversing alarm and while on haul roads have a flashing light.

7.0 Training and Awareness

7.1 Training, Awareness, and Competency

The Renewal Corporation will require training for all personnel prior to commencing on site. The level of training will be commensurate with the level of individual risk their works are likely to entail. Trainings will include (as appropriate):

- Environmental and safety policies, site management plans as well as environmental roles and responsibilities,
- The significance of environmental impacts caused by individual roles and activities,
- Incident management, and
- Potential consequences of non-conformance.

7.2 Inductions

The Renewal Corporation will require all personnel to undergo inductions to cover the key requirements of the Site-Specific Health and Safety Plan and the Oregon Traffic Management Plan.

7.2.1 Inductions

The Renewal Corporation will implement a program of Induction that covers safety, environment, community, and overview. This program will reinforce the responsibility of all personnel to adhere to the safety and traffic requirements of the Proposed Action. The Induction will include:

- Overview of the site Oregon Traffic Management Plan,
- PPE requirements,
- Contact details,
- Incident management and notification,
- Hours of work,
- Safety policies,
- Designated parking areas,
- Speed limits,
- Community protocol,
- Timetabled public transport and school bus, if applicable, and
- Emergency detour plans.

7.2.2 Visitor Inductions

The Renewal Corporation will require visitors to undergo a visitor's induction and their host is responsible for all actions and conduct of the visitor. During all times, visitors will be accompanied by personnel who have previously undergone Induction and safety training.

7.3 Toolbox Talks

Toolbox talks will be conducted regularly by the Renewal Corporation to improve on safety, health, quality, and environmental issues. Talks will focus on the current or most upcoming work and will highlight specific safety aspects and actions being undertaken as part of ongoing management, training, and development. In general, toolbox talks will cover:

- An overview of current works,
- Traffic and access,
- Entry/exit point location,
- Parking areas,
- If other persons are required to enter site that day, and
- Incidents, or potential incidents and possible implications.

8.0 References

Federal Energy Regulatory Commission (FERC). 2018. Order Amending License and Deferring Consideration of Transfer Application FERC Project Nos. 2082-062 and 14803-000. 162 FERC ¶ 61,236. Washington, DC, Federal Energy Regulatory Commission, Office of Energy Projects, Division of Hydropower Licensing.

Klamath County. 2019. Memorandum of Understanding Between Klamath County, Oregon and the Klamath River Renewal Corporation. Effective March 26, 2019.

Knight Piésold. 2022a. Design Report. Prepared for Klamath River Renewal Project. June.

Knight Piésold. 2022b. Klamath River Renewal Project Existing Conditions Assessment Report – Volume VII (Rev 0).

Oregon Department of Transportation (ODOT). 2011. Temporary Traffic Control Handbook. December 2011. ttps://www.ci.oswego.or.us

PacifiCorp. 2004. Environmental Report. Final License Application, Volume 2, Exhibit E. Klamath Hydroelectric Project (FERC Project No. 2082).

United States Department of Interior (US DOI), California Department of Fish and Game (CDFW). 2012. Klamath Facilities Removal Final Environmental Impact

Statement/Environmental Impact Report Volume II. Technical Report. Watershed Code: 180102.

Appendix A

ESAL Calculations Summary Sheet

VA103-00640/01 August 14, 2020

Calculation Summary Sheet

Project Name: Klamath River Renewal
Project No.: VA103-00640/01
Task No.: 1103.0010: Klamath MOU Traffic Management Plan & Other Compliance Documents
Title: Klamath County Road Usage Supporting Calculations
Calc. Rev. No.: A

Description of Calculation:

This calculation estimates the potential impacts of the Klamath River Renewal Project (Project) on roads in Klamath County, Oregon. Due to increased Project-related loading on the roads this calculation aims to differentiate road usage occurring due to normal operating conditions vs. the projected construction period. As stated, in the Project Memorandum of Understanding (MOU) with Klamath County, the Project will be responsible for making any repairs due to construction-related activities.

Attachments and supplementary material:

Table 1	Estimated Existing Traffic
Table 2	Estimated Construction Haulage
Table 3	Total Trips from Construction ESALs Compared to Material Haulage Loads
Table 4	ESALs Rural Roads
Table 5	ESALs State Highways
Table 6	ESALs Interstate
Attachment 1	ODOT Traffic Volumes on State Highways

Calculation by: Kevin Howard	Date: August 14, 2020
Reviewed by: Cynthia Parnow	
Results included in (Deliverable): KRRP Traffic Management Plan – Klamath County, Oregon	
Or Superseded by (Calculation File): N/A	

1.0 EXISTING TRAFFIC - KLAMATH COUNTY

Baseflow average annual daily traffic (AADT) counts for highways were available for highways OR 66 and US 97 from the Oregon Department of Transportation (ODOT) in the Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report (US DOI & CDFW, 2012). In addition, traffic counts on Topsy Grade Road were performed in 2010 (US DOI & CDFW, 2012), which have been found to still be applicable by comparing these counts with surrounding road data available from ODOT between 2010 and 2020. Traffic count data for Topsy Grade Road was used for J.C. Boyle Powerhouse Road (Spring Island Road) as they are similar-sized rural collector/principal arterial roads.

Vehicle size distribution data were obtained from a Klamath County road analysis traffic noise model (USDOI and CDFW, 2012). The vehicle size classifications defined by the traffic noise model vary slightly from the inputs required for Equivalent Single Axle Loads (ESAL) calculations (discussed in Section 3.0).

2.0 CONSTRUCTION TRAFFIC AND MATERIAL HAULAGE

Increased traffic loadings were developed using construction traffic projections developed for the Copco Road Pavement Design (KP, 2020) and from estimated material haulage quantities developed for the currently planned dam removal activities at the J.C. Boyle Facility (KRRC, 2020). The current construction traffic includes a variety of vehicle types each with different loading factors with the goal of overestimating the increased traffic associated with the project.

These construction traffic loading calculations have been calculated with substantial conservatism. Table 3 shows the difference between the trips projected based on material quantities and the total trips based on construction loading calculated. It should also be noted that this table doesn't include the other vehicles estimate for the construction ESALs, which is another indication that construction loads have been developed very conservatively.

Local loads (those not utilizing highways) were split between the primary access roads, Topsy Grade Road and J.C. Boyle Powerhouse Road. However, to build in another level of conservatism it has been assumed that all materials will be applied to the ESAL calculation for each load.

3.0 PREDICTED NUMBER OF 18,000 LB ESALS

The 1993 AASHTO Flexible Pavement Structural Design method was used for guidance to develop a standard road degradation measurements equivalent single axel load (ESAL) anticipated over the construction period.

The predicted number of Equivalent Single Axle Loads (ESALs) is calculated for the existing traffic discussed in Section 2.0 and the additional construction traffic discussed in Section 3.0.

In addition to the base flow, a construction flow of average daily traffic over a 2.5-year construction period was estimated for the duration of the project, with an assumed construction heavy haul traffic of one Triple 16 trailer per day, several concrete trucks, dump trucks, and 18-wheel Tractor Semi Trailer Trucks. The pavement designs presented in this calculation use assumed loading at the maximum loads typically permitted by the state of California for heavy haul and oversize loads for the Triple 16 trailer. Assumed Annual Average Daily Traffic for cars and heavy vehicles are presented in the table below. Load Factors were calculated for each vehicle from the AASHTO 1993 guidelines, and ESALs were calculated for each vehicle using the following equation:

$$ESAL = AADT \times 365 \times GF \times TF$$

Where:

ESAL = Equivalent Single Axle Loads
AADT = Annual Average Daily Traffic
365 = Days in a year
GF = Growth Factor (Assumed to be 24.3, based on a 2% growth rate over 20 years)
TF = Truck Factor, or Load Factor for each vehicle type

4.0 RESULTS

As shown in Table 5.0, the additional loadings on rural county roads is expected to be roughly 116% percent of the normal loading, thus increasing the frequency of repairs required. The likely repairs and maintenance on these county roads will likely consist of regrading the aggregate base courses. The additional loadings on State Highways is expected to be roughly 47% percent of the normal loading, thus slightly increasing the frequency of repairs required. The additional loadings on the Interstate is expected to be only 1% percent of the normal loading, thus having a negligible effect on the expected degradation on the road.

Table 5.0 ESAL Comparisons for Klamath County Roads

Road Type	Existing ESALs	Construction Vehicle ESALs	Increase in Normal Loading (%)
Rural Roads	29,439	34,187	116
State Highways	72,486	34,187	47
Interstate	6,220,885	34,187	1

References

American Association of State Highway and Transportation Officials. 1993. AASHTO Guide for Design of Pavement Structures. Technical Document. Washington, D.C.

Guide for Mechanistic-Empirical Design of New and Rehabilitated Pavement Structures Appendix CC-1: Correlation of CBR Values with Soil Index Properties National Cooperative Highway Research Program, Transportation Research Board, National Research Council.

Klamath River Renewal Corporation (KRRC). 2020. Administrative Draft Biological Assessment.

Knight Piésold Consulting (KP). August 2020a. 90% Design Submittal (Rev 0).

Knight Piésold Consulting (KP). July 2020b. Klamath River Renewal Project Existing Conditions Assessment Report – Volume I (Rev C).

National Cooperative Highway Research Program (NCHRP). 2016. Culvert and Storm Drain System Inspection Manual. Technical Document.

Oregon Department of Transportation. 2018. Traffic Volume Tables for State Highways 2018.

Oregon Department of Transportation. 2010. Traffic Volume Tables for State Highways 2010.

Pavement Tools Consortium. 2008. 1993 AASHTO Flexible Pavement Structural Design. "1993 AASHTO Flexible Pavement Structural Design" Accessed: August 2020. https://pavementinteractive.org/reference-desk/design/structural-design/1993-aashto-flexible-pavement-structural-design/

United States Department of Interior (US DOI), California Department of Fish and Game (CDFW). 2012. Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report Volume II. Technical Report. Watershed Code: 180102.

United States Department of National Resources Conservation Service Soil (USDA). Web Soil Surveys. Database. Accessed August 2020. https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/

Tables

Table 1
Estimated Existing Traffic

Road Segment	AADT	AADT Distribution (%) [1]			AADT [2]		
		Auto	Medium Trucks	Heavy Trucks	Auto	Medium Trucks	Heavy Trucks
Topsy Grade Road [3]	200	58.82	34.85	6.33	118	70	13
JC Boyle Powerhouse Road [4] (Spring Island Road)	200	58.82	34.85	6.33	118	70	13
OR 66 [5]	500	58.82	34.85	6.33	294	174	32
US 97 [6]	7400	33.55	28.34	38.11	2483	2097	2820

Notes:
1. AADT Distribution Estimates (US DOI & CDFW, 2012) using vehicle classifications based on the FHWA TNM: Auto = cars and light duty trucks, Medium Trucks = cargo vehicles with two axles and six tires; Heavy trucks - cargo vehicles with three or more axles.
2. Vehicle classifications have been converted from TNM classifications to the vehicles with loading factors identified in the ESAL calculation, where Auto = Passenger Cars, Medium Trucks = Panel & Pickup Trucks, and Heavy Trucks = Tractor Semi Trailer Trucks
3. Traffic count estimated from field observations from 2010 (US DOI & CDFW, 2012). These values are not expected to have increase as the ODOT traffic estimates from 2010-2020 (ODOT 2010 & ODOT 2018) on OR 66, which serves as the primary acces to Topsy Grade Road, have not increased over this time period.
4. It is assumed that traffic on JC Boyle Powerhouse Road is similar to Topsy Grade Road.
5. AADT at MP 48.73, 0.02 mile east of Hamaker Mountain Road (ODOT, 2018).
6. AADT at MP 273.92, 0.30 mile south of Nevada Avenue Interchange (ODOT, 2018).

Table 2
Estimated Construction Haulage

Waste Material	In-Situ Quantity [1]	Bulk Quantity [1]	Disposal Site [1]	Quantity per Trip [1]	Total Trips [1]	Road Usage [2]	Vehicle Type
Dam Embankment - Earth	135,800 CY	163,000 CY	On-site - Left and Right Banks Upstream of the Dam	40 CY/Trip (unpaved road)	4,100 Trips (1-miles RT)	Rural County	Dump Truck
Powerhouse Tailrace - Earth	*11,000 CY*	*13,000 CY*	*On-Site Powerhouse Tailrace*	*N/A*	*On-site disposal*	*NA*	*NA*
Dam - Concrete	3,440 CY	4,470 CY	On-site Scour Hole	40 CY/Trip (unpaved road)	110 trips (4 miles RT to scour hole)	Rural County	Dump Truck
Power Canal and Forebay Concrete (Option 1)	23,000 CY	29,900 CY	On-site Scour Hole		750 trips (2 miles RT)	Rural County	Dump Truck
Powerhouse and Micellaneous foundation concrete	*400 CY*	*520 CY*	*On-Site Tailrace*		*On Site Disposal*	*NA*	*NA*
Dam Mech/Elec	440 tons	--	Salvaged, or landfill near Klamath Falls, or alternative permitted site	25 tons/trip (via Highway 66)	20 trips (44 miles RT)	Highway and Rural County	Triple 16
Power Canal Mech/Elec	270 tons				10 trips (48 miles RT)	Highway and Rural County	Triple 16
Powerhouse Mech/Elec	11,210 tons				50 trips (52 miles RT)	Highway and Rural County	Triple 16
Timber Bridge	60 CY		Rock disposed on site; sheet piles, treated wood disposed off-site at permitted site	40 CY/Trip (unpaved road)	2 trips (up to 52 miles RT)	Highway and Rural County	Tractor Semi Trailer Truck
Building Material Debris	10 buildings 17,300 ft^2		Landfill near Klamath Falls or alternative permitted site	25 tons/trip (Highway 66)	20 trips (44 miles RT)	Highway and Rural County	Tractor Semi Trailer Truck
Power Lines	2.9 miles of 12-kV and 230-kV lines					Highway and Rural County	Tractor Semi Trailer Truck

Notes:
1. Material quantities, disposal sites and calculcated trips were taken from the Administrative Draft Biological Assessment (KRRC 2020)
2. Hauling routes were estimated from the routes shown on the J.C. Boyle Facility Contrustion Access Key Map and J.C. Boyle Facility Contrustion Access Reservoir Area Roads (Drawings C1500 and C1501, respectively) include with the 90% Design Report (KP 2020b)

Table 3
Total Trips from Construction ESALs Compared to Material Haulage Loads

Vehicle	ADT	Total trips from vehicles estimated	Counts specific to Material Haulage	Remaining trips assumed after Material Haulage loads
Rural County Construction Traffic:				
Dump Trucks:	6	5,475	4,960	515
Tractor Semi Trailer Trucks:	10	9,125	42	9,083
Triple 16 Trailer - maximum permit weight	1	913	80	833
State Highway and Interstate Construction Traffic:				
Dump Trucks:	2	1,825	496	1,329
Tractor Semi Trailer Trucks:	2	1,825	80	1,745
Triple 16 Trailer - maximum permit weight	1	913	42	871

Table 4
Estimated ESALs
for Rural Roads in Klamath County, Oregon
Pavement Section Design Location: KRRP, Klamath County, Oregon

Average Daily Traffic Count: 402 All Lanes & Both Directions
Construction Period: 2.5 Years

Calculation of Design 18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESAL's
Existing Traffic:				
Passenger Cars:	118	2.0%	0.0008	87
Panel & Pickup Trucks:	70	2.0%	0.0122	791
Tractor Semi Trailer Trucks:	13	2.0%	2.3719	28,560
Average Daily Traffic in Design Lane:	201			
Existing Traffic 18 kip ESAL's:	**29,439**			
Construction Traffic:				
Panel & Pickup Trucks:	30	2.0%	0.0122	339
Concrete Trucks:	1	2.0%	4.4800	4,150
Dump Trucks:	2	2.0%	3.6300	6,724
Tractor Semi Trailer Trucks:	2	2.0%	2.3719	4,394
Double Trailer Trucks	2	2.0%	2.3187	4,295
Triple 16 Trailer - maximum permit weight	1	0.0%	15.6540	14,284
Average Daily Traffic in Design Lane:	38			
Construction Traffic 18 kip ESAL's:	**34,187**			

Table 5
Estimated ESALs
for State Highways in Klamath County, Oregon
Pavement Section Design Location: KRRP, Klamath County, Oregon

Average Daily Traffic Count: 1,000 All Lanes & Both Directions
Construction Period: 2.5 Years

Calculation of Design 18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESAL's
Existing Traffic:				
Passenger Cars:	294	2.0%	0.0008	218
Panel & Pickup Trucks:	174	2.0%	0.0122	1,966
Tractor Semi Trailer Trucks:	32	2.0%	2.3719	70,302
Average Daily Traffic in Design Lane:	500			
Exsiting Traffic 18 kip ESAL's:	**72,486**			
Construction Traffic:				
Panel & Pickup Trucks:	30	2.0%	0.0122	339
Concrete Trucks:	1	2.0%	4.4800	4,150
Dump Trucks:	2	2.0%	3.6300	6,724
Tractor Semi Trailer Trucks:	2	2.0%	2.3719	4,394
Double Trailer Trucks	2	2.0%	2.3187	4,295
Triple 16 Trailer - maximum permit weight	1	0.0%	15.6540	14,284
Average Daily Traffic in Design Lane:	38			
Construction Traffic 18 kip ESAL's:	**34,187**			

Table 6
Estimated ESALs
for Interstate in Klamath County, Oregon
Pavement Section Design Location: KRRP, Klamath County, Oregon

Average Daily Traffic Count: 14,800 All Lanes & Both Directions
Construction Period: 2.5 Years

Calculation of Design 18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESAL's
Existing Traffic:				
Passenger Cars:	2,483	2.0%	0.0008	1,840
Panel & Pickup Trucks:	2,097	2.0%	0.0122	23,696
Tractor Semi Trailer Trucks:	2,820	2.0%	2.3719	6,195,348
Average Daily Traffic in Design Lane:	7,400			
Exsiting Traffic 18 kip ESAL's:	**6,220,885**			
Construction Traffic:				
Panel & Pickup Trucks:	30	2.0%	0.0122	339
Concrete Trucks:	1	2.0%	4.4800	4,150
Dump Trucks:	2	2.0%	3.6300	6,724
Tractor Semi Trailer Trucks:	2	2.0%	2.3719	4,394
Double Trailer Trucks	2	2.0%	2.3187	4,295
Triple 16 Trailer - maximum permit weight	1	0.0%	15.6540	14,284
Average Daily Traffic in Design Lane:	38			
Construction Traffic 18 kip ESAL's:	**34,187**			

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Attachment 1

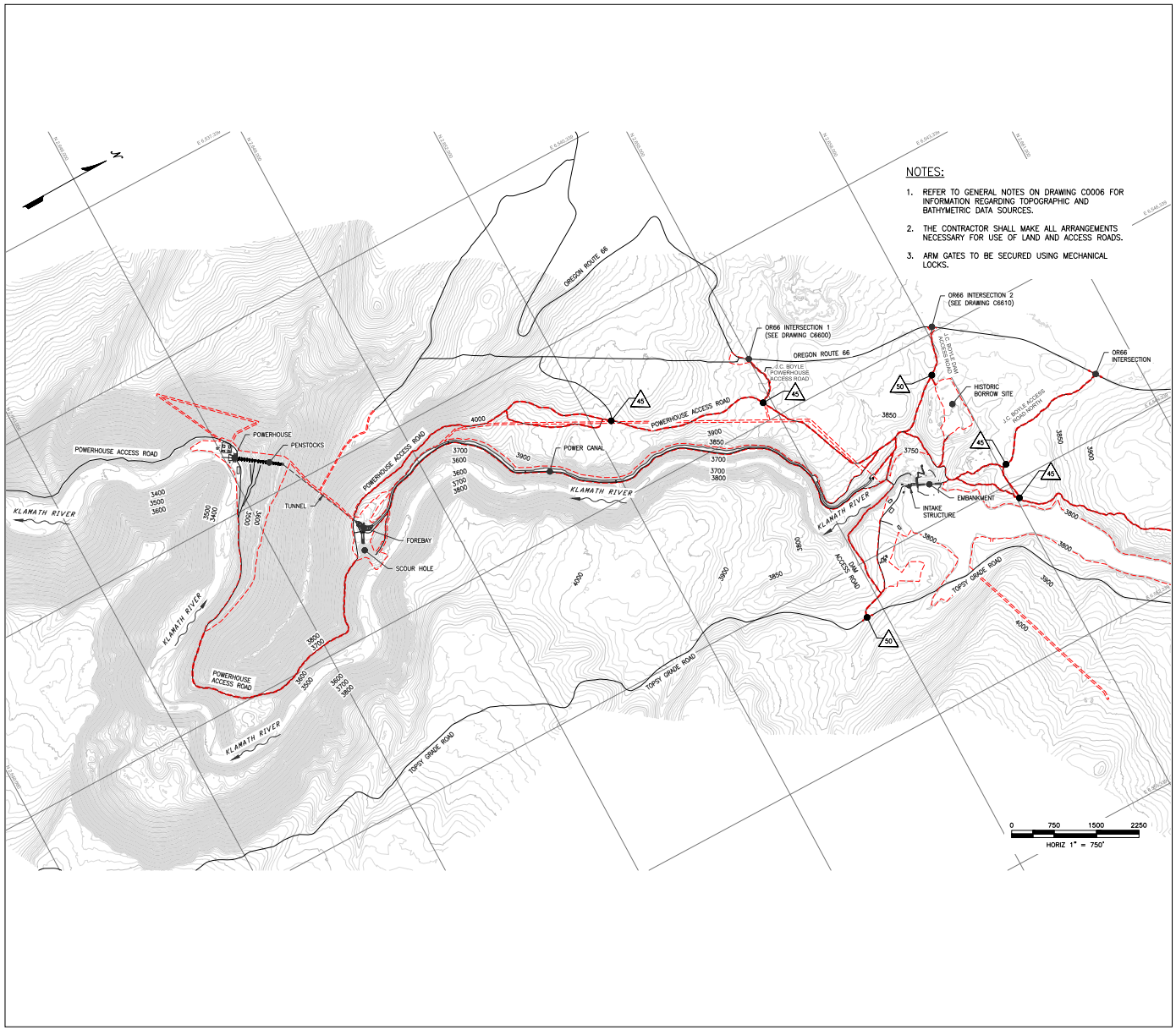
ODOT – 2018 Traffic Volumes on State Highways

Milepoint	2018 AADT All Vehicles	ATR AVC	Location Description
			THE DALLES-CALIFORNIA HIGHWAY NO. 4 (Continued)
138.60	*40000*		0.15 mile north of SE Truman Avenue
138.90	*41300*		0.27 mile north of Reed Market Road Interchange
139.61	*29700*		0.44 mile south of Reed Market Road Interchange
139.80	*29600*		0.17 mile north of Powers Road Interchange
140.22	*22400*		0.08 mile north of Badger Road
140.45	*21800*	*	Bend-Pinebrook Automatic Traffic Recorder, Sta. 09-025, 0.07 mile north of Pinebrook Boulevard
140.65	*16800*		0.13 mile south of Pinebrook Boulevard
			Equation: MP 141.12 BK = MP 141.86 AH
142.41	*26500*	*	Lava Butte Automatic Traffic Recorder, Sta. 09-003, 0.17 mile south of China Hat Road
144.20	*18900*		0.75 mile south of Galen Baker Road
153.83	*12000*		0.75 mile south of South Century Drive
155.60	*11000*		0.10 mile south of Vandevert Road
161.84	*9900*		0.10 mile south of Paulina Lake Road
167.48	*9900*		0.02 mile north of 1st Street in La Pine
169.58	*8200*		0.10 mile north of Fremont Highway (OR31)
169.88	*6200*		0.20 mile south of Fremont Highway (OR31)
183.84	*5500*		0.20 mile north of Mississippi Drive at Gilchrist
185.35	*5800*		0.02 mile north of Jones Street
194.75	*4300*		0.40 mile north of Willamette Highway (OR58)
195.55	*5200*		0.40 mile south of Willamette Highway (OR58)
204.65	*6000*	*	Chemult Automatic Vehicle Classifier, Sta. 18-006, 0.40 mile south of Chemult Dump Road
212.79	*5200*		0.30 mile north of North Umpqua Highway (OR138)
213.29	*4700*		0.20 mile south of North Umpqua Highway (OR138)
231.91	*6200*		0.02 mile north of Fuego Road
243.22	*4700*	*	Chiloquin Automatic Traffic Recorder, Sta. 18-023, 4.32 miles north of Chiloquin Highway No. 422
247.04	*6300*		0.50 mile north of Chiloquin Highway (North Jct.)
248.98	*5800*		0.10 mile north of Chiloquin Highway (South Jct.)
249.18	*6200*		0.10 mile south of Chiloquin Highway (South Jct.)
254.30	*6600*	*	Modoc Point Automatic Traffic Recorder, Sta. 18-022, 3.53 miles north of Modoc Point Road
258.03	*6600*		0.20 mile south of Old Modoc Point Road
265.76	*6900*		0.10 mile south of Algoma Road
268.95	*7000*		0.10 mile south of Shady Pine Road
271.27	*7400*		0.02 mile south of Wocus Road
272.28	*9400*		0.30 mile north of Klamath Falls-Malin Highway (OR39/US97 Bus./Crater Lake Parkway)
273.08	*6000*		0.50 mile south of Klamath Falls-Malin Highway (OR39/US97 Bus./Crater Lake Parkway)
273.92	*7400*		0.30 mile south of Nevada Avenue Interchange
276.48	*8700*		0.40 mile north of Green Springs Highway (OR66) and South Klamath Falls Highway (OR140)
277.43	*6500*		0.30 mile south of Green Springs Highway (OR66) and South Klamath Falls Highway (OR140)
			Equation: MP 277.61 BK = MP 278.03 AH
278.69	*5100*		On Klamath River Bridge
280.06	*5100*		0.10 mile north of Miller Island Road
282.82	*5300*		0.05 mile north of Cross Road
289.44	*4300*	*	Midland Automatic Vehicle Classifier, Sta. 18-019, 2.30 miles north of the Oregon-California State Line

Milepoint	2018 AADT All Vehicles	ATR AVC	Location Description
			KLAMATH FALLS-LAKEVIEW HIGHWAY NO. 20 (Continued)
70.73	*700*		4.00 miles southeast of Quartz Mountain Pass Summit
88.96	*1000*		0.10 mile west of Tunnel Hill Road
89.16	*1200*		0.10 mile east of Tunnel Hill Road
92.43	*1500*		0.70 mile east of Westside Road at Maddock Corner
93.88	*1900*		0.02 mile west of road to Airport
95.39	*2100*		0.02 mile east of Roberta Avenue
95.72	*2600*		0.02 mile east of N "R" Street
			West city limits of Lakeview
96.03	*3300*		0.02 mile west of "L" Street
96.35	*3600*		0.02 mile west of Fremont Highway (US395)
			GREEN SPRINGS HIGHWAY NO. 21
			Milepoint indicates distance from OR99, in Ashland
1.02	*12300*		0.02 mile west of Tolman Creek Road
1.22	*13400*		0.12 mile west of Pacific Highway (I-5)
1.42	*6600*		0.08 mile east of Pacific Highway (I-5)
1.80	*7300*		0.07 mile east of E Main Street
2.04	*5400*		0.06 mile southeast of Dead Indian Memorial Road
2.49	*4100*		0.04 mile southeast of Crowson Road
4.61	*2300*		0.02 mile southeast Emigrant Lake Road
6.44	*1500*		0.02 mile northwest of Siskiyou Highway
6.61	*1100*	*	Siskiyou Junction Automatic Traffic Recorder, Sta. 15-007, 0.15 mile east of Siskiyou Highway No. 273 (OR273)
9.28	*580*		0.10 mile east of Buckhorn Spring Road
			Equation: MP 13.66 BK = MP Z13.00 AH
17.51	*440*		0.02 mile east of Eastside Hyatt Lake access road
23.42	*340*		On Jenny Creek Bridge
			Jackson - Klamath County Line, MP 27.87
48.73	*500*		0.02 mile east of Hamaker Mountain Road
49.89	*1500*		0.02 mile west of Keno-Worden Road (to US97)
49.93	*2400*		0.02 mile east of Keno-Worden Road (to US97)
50.68	*3000*		0.02 mile east of Clover Creek Road
54.46	*5000*		0.02 mile east of Round Lake Road
56.64	*4400*		0.10 mile southwest of Weyerhaeuser Corporation Road
56.79	*5100*		0.05 mile northeast of Weyerhaeuser Corporation Road
58.17	*5700*		0.10 mile west of Granite Street
58.84	*7200*		0.02 mile west of Lake of the Woods Highway (OR140)
			CRATER LAKE HIGHWAY NO. 22
			Milepoint indicates distance from Rogue Valley Highway (OR99), in Medford
0.20	*35600*		0.15 mile north of Rogue Valley Highway (OR99), Siskyou Boulevard
0.84	*31800*		0.05 mile west of Poplar Drive
1.11	*43300*	*	North Medford Automatic Traffic Recorder, Sta. 15-017, 0.64 mile east of Pacific Highway No. 1 (I-5)
1.38	*39200*		0.02 mile southwest of Whittle Avenue
2.02	*24200*		0.15 mile south of Owen Drive
3.63	*31700*		0.02 mile south of East Vilas Road
3.67	*29300*		0.02 mile north of East Vilas Road
5.41	*20000*		Equation: MP 29.18 BK = MP Z29.16 AH

Appendix B

Access Road and Security Map



KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project

Figure 1 - Access Road and Security Map

November, 2022

(At original document size of 11x17)

LEGEND:

- EXISTING ACCESS ROAD
- LIMITS OF WORK
- TO BE CONSTRUCTED
- 45 UNMANNED ARM GATE
- 50 MANNED SECURITY GATE

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Appendix B

California Traffic Management Plan

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project
FERC Project No. 14803

California Traffic Management Plan

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

Prepared by:
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December 2022

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List of Tables

Appendices

1.0 Introduction

The California Traffic Management Plan described herein is a subplan of the Construction Management Plan to be implemented as part of the Proposed Action for the Lower Klamath Project.

1.1 Purpose of California Traffic Management Plan

The purpose of the California Traffic Management Plan is to describe the measures the Renewal Corporation will implement to maintain efficient and safe movement of vehicles throughout the construction zones and construction activities at the Project construction works. This California Traffic Management Plan will prevent unreasonable traffic delays and maintain acceptable levels of service, traffic circulation, and safety on state, county, and private roadways.

The Renewal Corporation has negotiated a Memorandum of Understanding (MOU) with the County of Siskiyou which addresses the County's regulatory interests with respect to traffic control, roadway alignment and maintenance, and related topics.

When public outreach is required, the Renewal Corporation will coordinate with the public to ensure that local environmental justice communities are included in emergency planning. Public outreach communication will be in English, Spanish, and Hmong.

2.0 Work Activities

2.1 Implementation

Renewal Corporation construction personnel will receive an initial orientation describing the details of this California Traffic Management Plan. All related training will be documented by the Kiewit safety adviser.

The California Traffic Management Plan will be updated as needed if additional risk areas are encountered or to improve best management practices.

2.1 Reporting

Inspection procedures will be followed consistent with the Renewal Corporation's discussions with Siskiyou County.

The Renewal Corporation will investigate public roads that may be potentially impacted by the Proposed Action. The Renewal Corporation will prepare and provide the County with a summary report of existing conditions of such public roads and identify repairs that are needed to maintain the efficient and safe movement of construction traffic.

The condition of existing road(s) that may be impacted by construction traffic will be inspected by the Renewal Corporation and a report will be completed. Following construction, the Renewal Corporation will complete a final road condition inspection and report which will be used to confirm the final roadway condition.

3.0 Site Access and Traffic

3.1 Access to Site

3.1.1 Preconstruction Activities and Pre-Emptive Roadway Work

Prior to commencement of the Project work involving heavy loading, which will occur prior to reservoir drawdown, the Renewal Corporation will undertake repairs and apply and asphalt overlay to Copco Road. The quantities and locations are specified in the Preemptive Roadway Repair Plan presented in Table 3-1. The County and Renewal Corporation agree that the Renewal Corporation will fulfill its obligation to overlay 7,500 tons of material over 7 miles with the County approving the locations in accordance. During the same period, the County will undertake repairs and apply single-chip seal to Copco Road, Ager Road, and Ager-Beswick Road in accordance with the quantities and locations presented in Table 3-1. The County and the Renewal Corporation will cooperate to schedule and execute their respective work to assure expeditious performance and completion of the work as a whole.

The County agrees that the Preemptive Roadway Work is sufficient to offset the expected damages to these County roads. Following completion of the Preemptive Roadway Work, the County will be responsible for maintenance of these roads in a good and serviceable condition consist with applicable maintenance standards and availability of funding.

Table 3-1 Preemptive Roadway Work

ITEM	SECTION OF ROADWAY	PREEMPTIVE ROADWAY WORK	RESPONSIBILITY OF PREEMPTIVE ROADWAY WORK	
			Siskiyou County	Renewal Corporation
1	**Copco Road**: I-5 to Ager Road (approx. 3 miles)	Single Chip Seal	X	
2	**Copco Road**: Ager Road to Mile Post 10 (approx. 7 miles)	Prep Road/Digout/Hand Patch: Crew/Equipment/Materials over multiple weeks to repair damaged sections of road.		X
		125’ Asphalt Overlay: 22’ wide x 0.125’thick x 5280’/mile x 7 miles = 7500 tons		X

ITEM	SECTION OF ROADWAY	PREEMPTIVE ROADWAY WORK	RESPONSIBILITY OF PREEMPTIVE ROADWAY WORK	
			Siskiyou County	Renewal Corporation
3	**Copco Road**: Mile Post 10 to Fall Creek Road (approx. 9 miles)	**Prep Road/Digout/Hand Patch**: Crew/Equipment/Materials for approx. 1 week to repair damaged sections of road		X
		Single Chip Seal: (approx. $40,000 per mile x 9 miles)	X	
4	**Ager Road**: Copco Road to Ager-Beswick	**Grader Blankets**: (200 tons, approx. 2 weeks)	X	
5	**Ager Beswick Road**: Ager Road to Bogus Creek (approx. 8 miles)	**Crack/Prep**	X	
		Single Chip Seal: ($30,000 per mile x 8 miles)	X	

Pre-Construction Activities

The Renewal Corporation will provide adequate access and haul routes associated with the Proposed Action. Proposed improvements will be completed by the Renewal Corporation prior to the start of reservoir drawdown and will include the Preemptive Roadway Work described in the previous section. Access routes in the dam sites to access the dams for pre-drawdown improvements, dam removal, and channel restoration are provided in Table 3-2. These temporary access improvements are necessary to provide access to multiple portions of the Proposed Action area. The Renewal Corporation will return roads used by project-related vehicles to the respective owners and users in a state that equals or exceeds existing condition/function, or as specified in the Preemptive Roadway Work specifications.

Table 3-2. Proposed Roadway and Access Improvements

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS[1]	ROAD REHABILITATION
Copco Road (I-5 to Ager Road)	Potential pavement rehabilitation during or post Proposed Action.			**Preemptive Roadway Work**
Copco Road (Ager Road to Lakeview Road)	Potential pavement rehabilitation during or post Proposed Action.			**Preemptive Roadway Work**

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS[1]	ROAD REHABILITATION
Dry Creek Bridge	Design a temporary bridge strengthening system to allow the existing bridge to accommodate the anticipated live loads.	**X**		
Copco Road (Lakeview Road to Daggett Road)	Pavement maintenance during construction. Potential pavement rehabilitation during or post Proposed Action.	**X**		**Preemptive Roadway Work**
Scotch Creek and Camp Creek Culvert	Existing culvert will be removed and replaced with a new concrete box culvert; for fish passage purposes only.	**X**		
Copco Road (Daggett Road to Copco Access Road)	Potential road surface maintenance during or post Proposed Action.			**Preemptive Roadway Work**
Fall Creek Bridge at Copco Road	Design a temporary bridge strengthening system to allow the existing bridge to accommodate the anticipated live loads.	**X**		
Copco Road Bridge (near the Copco Lake Fire Department on the eastern side of Copco Reservoir)	Monitor post-drawdown for a 2-year period for potential erosion or scour at the bridge embankments and intermediate piers. Potential abutment erosion protection.		**X**	
Copco Access Road	Clear, grub, and regrade. Minor widening into hillside if possible.	**X**		
Ager Beswick Road	Aggregate shoulder widening to increase turning radius during pre-drawdown.			**Preemptive Roadway Work**
Mallard Cove Access Road	Minor works to enable barge mobilization.	**X**		
Daggett Road	Minor grading improvements Potential Road surface maintenance during or post Proposed Action.	**X**		**X**

LOCATION	IMPROVEMENTS	CONSTRUCTION ACCESS	POST-DRAWDOWN EFFECTS[1]	ROAD REHABILITATION
Fall Creek Crossing at Daggett Road	Potential existing culvert will be removed and replaced with a new arch culvert.	X		
Access through private property to East side of Copco 1 and Copco 2	Potential widening of existing roadways, earthwork to reduce grades and slope stability.	X		
Daggett Road Bridge	Construct permanent bridge upstream of existing bridge. Use a steel modular bridge construction.	X		

Notes:

Source: KRRC, 2022

1. The extent of repairs carried out will be determined on an as-needed basis with the Siskiyou County as per the Draft MOU.

In addition to the improvements listed in Table 3-2, construction improvement details for Copco Road are shown in Table 3-3. Copco Road will serve as the access route to construction activities for Copco No. 1 and Copco No. 2 Developments. Some degradation of the existing Copco Road from Highway 5 to Copco Access Road is expected due to the increased amount of use projected throughout the construction period.

Several bridges on Copco Road are not engineered for the projected loads, and construction improvements are required. Table 3-4 provides the existing bridge loading capacities and proposed actions for improvement, if necessary.

Table 3-3. Detailed Copco Road Potential Construction Improvements

TYPE	CONSTRUCTION TIME PERIOD	NAME	STRUCTURE PURPOSE	POTENTIAL IMPROVEMENTS[1]	NOTES
Road	Pre, during, and post construction	Copco Road	Will serve as the access route to construction activities Copco No. 1 and Copco No. 2 Developments	Mill and overlay road repair, asphalt, and base course replacements, and pull- off location construction.	Preliminary review of GPR and road coring data suggests some of the existing asphaltic concrete is placed directly on the subgrade, with little-to no base course; will require pavement rehabilitation.
Road	Pre, during, and post construction	Copco Road from Ager Road to Lakeview Road	Used for haul and access	Improvements such as mill and overlay or asphalt and base course replacement will be performed by the Renewal Corporation	Copco Road from Ager Road to Lakeview Road is classified as a minor collector. The pavement is in poor condition. T he Renewal Corporation will may improve this roadway for mobilization and hauling. The Renewal Corporation will use temporary traffic control for any pavement rehabilitation.
Road	Pre, during, and post construction	Copco Road from Lakeview Road to Daggett Road	Used for haul and access	Improvements such as mill and overlay or asphalt and base course replacement will be performed by the Renewal Corporation.	Pavement condition along this stretch is poor and may require pavement maintenance during construction. The Renewal Corporation will may improve this roadway for mobilization and hauling. The Renewal Corporation's 's contactor will use temporary traffic control for any pavement rehabilitation. This portion of Copco Road includes Brush Creek Bridge (Caltrans No.2C0280) and Jenny Creek Bridge (Caltrans No.2C0280).

TYPE	CONSTRUCTION TIME PERIOD	NAME	STRUCTURE PURPOSE	POTENTIAL IMPROVEMENTS[1]	NOTES
Road	Pre, during and post construction	Copco Road from Daggett Road to Copco Access Road	Used for haul and access	Improvements of the asphalt sections will include overlay and base course replacement. Portions of the aggregate base road will be improved by adding vehicle pull-out locations	The surface starts out as asphalt and transitions to aggregate base 1.2 miles east of the Daggett Road intersection and has very low traffic volume. The Renewal Corporation may improve the portions of this roadway for mobilization and hauling. This portion of Copco Road includes Fall Creek Bridge (Caltrans Bridge No.2C0198).
Road	Post-construction	Copco Road from Copco Access Road to Copco Road Bridge	KRRC's contractor will not use this portion of Copco Road for dam or powerhouse removal but will use it for construction access to various post-drawdown construction activities, such as culvert replacements, restoration work, and installing rock slope protection.	The Renewal Corporation will not be improving or upgrading this road for mobilization or hauling.	The road surface is primarily dirt and has very low traffic volume. No temporary traffic control will be required.
Bridge	Pre-construction	Fall Creek Bridge (Copco Road)	Bridge on Copco road - used for haul and access	Temporary strengthening structure will be installed at the existing bridge to accommodate anticipated projected vehicle loads	Current bridge is timber - will not withstand projected vehicle loads. Traffic volumes are low at Fall Creek bridge, with most of the traffic comprised of PacifiCorp staff. Construction will require temporary traffic control
Bridge	Pre-construction	Dry Creek Bridge (Copco Road)	Bridge on Copco road - used for haul and access	Temporary strengthening structure will be installed at the existing bridge to accommodate anticipated projected vehicle loads.	Current bridge is timber - will not withstand projected vehicle loads. Construction will require temporary traffic control

TYPE	CONSTRUCTION TIME PERIOD	NAME	STRUCTURE PURPOSE	POTENTIAL IMPROVEMENTS[1]	NOTES
Bridge	Post-drawdown	Jenny Creek Bridge (Copco Road)	Bridge on Copco road - used for haul and access	Monitor existing bridge for post-drawdown erosion at abutments.	No work planned. The Renewal Corporation will provide post-drawdown monitoring.
Bridge	Post- drawdown	Scotch Creek Bridge (Copco Road)	Bridge on Copco road - used for haul and access	Existing Scotch Creek culvert will be replaced by a concrete box culvert.	Construction improvement will require temporary traffic control.
Bridge	Post-drawdown	Camp Creek Bridge (Copco Road)	Bridge on Copco road - used for haul and access	Existing Camp Creek culvert will be replaced by a concrete box culvert.	Construction improvement will require temporary traffic control.

Notes:

Source: Knight Piésold, 2022

1. The extent of repairs carried out will be determined on an as-needed basis with the Siskiyou County as per the communications with Siskiyou County.

Table 3-4. Existing Bridge Status and Proposed Actions

EXISTING BRIDGE	BRIDGE LOAD RATING ACCORDING TO AS-BUILT INFORMATION	ACTION
Lakeview Road Bridge	40 Ton, 4-axle truck	Proposed Action-related traffic exceeding the posted load limits will be routed to alternate access route via Ager Beswick/Lakeview private roads. Option to install a temporary modular bridge at this location will be maintained in the event that relocation of traffic is not achieved.
Daggett Road Bridge	17 Ton Load Limit for double axle27 Ton Load limit for triple axle29 Ton Load limit for 4-axle	Construct permanent modular steel truss bridge upstream of existing bridge.
Dry Creek Bridge	No Rating Specified. Knight Piésold inspection deemed this bridge insufficient for anticipated projected loads.	Construct temporary strengthening structure to support existing bridge. Remove following completion of the Proposed Action.

Fall Creek Bridge at Copco Road	No Rating Specified. Knight Piésold inspection deemed this bridge insufficient for anticipated projected loads.	Construct temporary strengthening structure to support existing bridge. Remove following completion of the Proposed Action.
Copco Road Bridge	HS20-44 Alternate Design Load Permit Design Load	No modification required.
Jenny Creek Bridge	HL-93 Permit Design Load	No modification required.
Brush Creek Bridge	HS20-44 Alternate Design Load	No modification required.
Cottonwood Creek Bridge	HS20-44 Permit Design Load	No modification required.
Bogus Creek Bridge	HS20-44	No modification required. Visual inspection noted some cracks in the concrete deck and that RSP requires maintenance.
Willow Creek Bridge	HS20-44	No modification required.
Klamath on River Bridge	HS20-44 (National Bridge Inventory ([NBI]).	Not used for Construction Access Loads. Visual inspection noted cracking and excessive deflection in main central span.

NOTES:

HS20-44 = Vehicle with a front tractor axle weighing 4 tons, rear tractor axle weighing 16 tons, and semi- trailer axle weighing 16 tons (36 tons total).
AASHTO HL-93 vehicular live load is a combination of three different loads:

- HL-93 Design Truck = 32.7 tons
- HL-93 Design Tandem = 25 tons
- Design Lane Load = 0.95 tons/m uniformly distributed in the longitudinal direction

Data for bridge load capacities were taken from posted load limits, as-built drawings, and the Federal Highway Administrations' NBI Annual Inspection Reports.
This table was developed from publicly available data and should not be considered a comprehensive structural assessment for all project bridge load ratings.

Consistent with the Renewal Corporation's discussions with Siskiyou County, the Copco Road may be temporarily closed for up to 48 hours at Dry Creek and 72 hours at Fall Creek during construction activities. The intention is to not close these roads for any extended length of time, because most work will be conducted under the bridges. If closure is needed for short periods of time, flaggers will be used to direct traffic. If closure is required for a long period of time, a detour via Ager Road and Ager Beswick Road will be utilized to redirect traffic. These closures could occur twice at each location, once for preconstruction activities and once at the end of dam removal activities. The Renewal Corporation will provide signage and advanced notification prior to these works, and these closures will occur prior to May 1st of each calendar year. In addition, if the Renewal Corporation removes existing bridge railings and other conflicting features to allow adequate room for temporary bridge improvements, the Renewal Corporation will re-install existing bridge railings to the pre-existing condition. Removing bridge railings or other existing features will not constitute a need to rebuild or reinstall the railings or any other portion of the bridges to any updated code or standard.

The Renewal Corporation will construct a temporary shoefly detour immediately adjacent to the existing roadway as per discussions with Siskiyou County. This detour will be of sufficient width to pass at least one lane of traffic at all times through the creek crossing construction area. Detour embankments will be capped with temporary gravel surfacing and a 100-foot maintenance easement at both upstream and downstream of new Scotch Creek and Camp Creek right of way alignments will be developed. This will allow the County to trim and cut any vegetation interrupting flow in the new roadway and structure locations.

During construction improvements on Copco Road, the Renewal Corporation will provide temporary traffic control as needed, including but not limited to the following measures:

- Temporary advance warning signs to notify the public of construction improvements,
- Flaggers equipped with warning signs,
- Temporary construction personnel directing traffic safely through the construction improvement zone.

3.1.2 Copco No. 2 Development Access

The Copco No. 2 dam area will be accessed by Copco Access Road, which is regionally accessed via Copco Road to the North as shown in Figure 1 in Appendix A. Table 3-5 distinguishes between public and private roadways.

Access to Copco No. 2 powerhouse facilities and the Copco Village will be via Daggett Road. Daggett Road is regionally accessed via Copco Road. Daggett Road Bridge crosses the Klamath River just downstream of the Copco No. 2 powerhouse facilities. The culvert located at Fall Creek at Daggett Road requires construction improvements. At this location, the Renewal Corporation will remove the existing culvert and replace it with a new arch culvert; road and embankment design improvements will be made by the Renewal Corporation to support the new arch culvert.

The existing Daggett Road Bridge is not engineered for the Proposed Action loads. A new permanent 20-foot-wide steel truss bridge will be constructed by the Renewal Corporation upstream of the existing Daggett Road Bridge to provide construction as well as permanent access to the Copco No. 2 powerhouse facilities and substation. The north approach to the construction access bridge at Daggett Road will direct construction vehicles to the permanent construction access bridge, located upstream of the existing Daggett Road Bridge. The approach geometry provides the turning space required to accommodate a low-boy type vehicle to line up with the permanent bridge. Approach road surfaces will be gravel base and appropriate signage will be posted to clearly designate the permanent bridge access and closure of the existing bridge. Following construction, the new permanent bridge will serve as the river crossing and the existing bridge closed.

3.1.3 Iron Gate Development Access

Construction access to Iron Gate Development will be taken through Ager Beswick Road and Lakeview Road and a network of private roads as shown in Figure 1 in Appendix A. PacifiCorp is installing a new permanent bridge adjacent to the existing Lakeview Bridge to provide construction access. Table 3-5 distinguishes between public and private roadways. Lakeview Road via Ager Beswick Road provides access to the site on the south bank of the Klamath River. The Renewal Corporation will coordinate with local landowners to maintain and modify the private roads, as required between Ager Beswick Road/Crest Lane intersection and the Iron Gate Dam Development. This portion of the route includes approximately 5.8 miles of private gravel road. PacifiCorp will perform temporary traffic control as needed during potential Lakeview Road construction access improvements and pavement rehabilitation. Portions of lakeview road will be closed during periods of heavy hauling and Irongate Dam Removal. Access for Iron Gate Estates residents will be to the east entrance at Ager Beswick Road. Figure 1 provided in Appendix A shows the general route map to the Iron Gate Development. Potential improvement actions along this route include:

- Gravel re-surfacing as needed in preparation for construction vehicles (approx. length of unsurfaced road = 4.35 miles).
- Widening of tighter turns.
- Potential replacement of some culverts noted as being in poor condition.
- Some sections of Ager Beswick Road showed evidence of differential settlement, indicating weak subgrade conditions.
- Temporarily widening of Ager Beswick Road to the South at Crest Lane.

Private vehicles and construction vehicles with small loads will also access the Iron Gate Development through Lakeview Road via Copco Road.

Table 3-5. Roadway Jurisdiction

ROAD	PUBLIC	PRIVATE
I-5	X	

Copco Road	X	
Ager Beswick Road	X	
Ager Road	X	
Daggett Road	X	
Lakeview Road	X	
Crest Lane		X
Copco Access Road		X

3.2 Existing Site Traffic Characteristics

In July 2019, a visual inspection of the roads in the Proposed Action area was completed (Knight Piésold, 2022b). The road inspection evaluated surface types, the frequency and severity of distresses, and listed the road conditions either as good (e.g., like new, structurally sound, and functionally adequate), fair (e.g., some deterioration, but structurally sound and functionally adequate) or poor (e.g., significant deterioration, requiring maintenance or repair).

In spring 2021, prior to mobilization and construction activities, the Renewal Corporation will document existing condition of Ager Road, Copco Road, and Ager Beswick Road using a video survey and associated plan markup documentation. This survey and documentation will serve as the base roadway condition.

Copco Road was inspected from I-5 to the intersection of Copco Road and Ager Beswick Road. The road has varying conditions from good to poor, and has multiple surface types, distresses, lane widths, shoulder availability, and levels of previous repair. The road is generally winding in nature and narrow areas are frequent. For Copco Road construction access improvements, refer to Table 3-3.

Ager Road from Copco Road to the intersection of Ager Beswick Road has an asphalt pavement surface and is in good condition. Ager Beswick Road from Ager Road to Copco Road also has an asphalt pavement surface and is in good condition. Lakeview Road from Copco Road to the end of the public roadway is composed of aggregate base and is in good condition. Copco Access Road has an aggregate base pavement surface and is in fair condition. Areas of nearby vegetation, steep slopes and tight turns exist on Copco Access Road.

Roadways for site access are primarily low-trafficked roads in a rural setting. Estimated traffic counts for existing roads in the regional area from Oregon Department of Transportation and Caltrans are provided in Table 3-6. Estimated peak hour traffic counts per direction for existing conditions as well as during construction activities are provided in Table 3-7.

Table 3-6. Estimated Traffic Counts for Existing Conditions

ROAD SEGMENT	AADT	AADT DISTRIBUTION (%) [1]			AADT DISTRIBUTION			PHT DISTRIBUTION[3]			PHT DISTRIBUTION FOR EACH DIRECTION[4]		
		AUTO [2]	MEDIUM TRUCKS [2]	HEAVY TRUCKS[2]	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS
Ager- Beswick Rd[6]	200	58.82	34.85	6.33	117.64	69.7	12.66	12	7	2	6	4	1
Copco Rd[5]	250	71.34	0	28.66	178	0	72	18	0	7	9	0	4

Notes:

Source: US DOI and CDFW, 2012 AADT: Average Annual Daily Traffic PHT: Peak Hour Traffic

1. AADT distribution percentage provided by transportation engineers (J. Key, personal communication, December 13, 2010).
2. TNM vehicle classification: Auto = cars and light duty trucks, Medium Trucks = cargo vehicles with two axles and six tires; Heavy trucks - cargo vehicles with three or more axles.
3. PHT assumed to be 10% of AADT based on a review of published Caltrans and ODOT traffic counts (ODOT, 2010; Caltrans, 2010).
4. PHT for each direction assumed to be the same in both direction of traffic.
5. Traffic count estimated from field observations (CDM, field observations, October 17, 2010).
6. Assume Ager-Beswick Rd is similar to Topsy Grade Rd in Oregon (J. Key, personal communication, February 8, 2011).

Table 3-7. Estimated Peak Hour Traffic Counts per Direction

ROAD SEGMENT	DIRECTION	EXISTING CONDITIONS[1]			DURING CONSTRUCTION ESTIMATES		
		AUTO[2]	MEDIUM TRUCKS[2]	HEAVY TRUCKS[2]	AUTO	MEDIUM TRUCKS	HEAVY TRUCKS[3]
Ager Rd	North	6	4	1	6	4	1
	South	6	4	1	6	4	2
Copco Rd[4]	East	9	0	4	125	0	4
	West	9	0	4	9	0	13

Notes:

Source: US DOI and CDFW, 2012

1. See Existing Conditions table for PHT distribution references.
2. TNM vehicle classification: Auto = cars and light duty trucks, Medium Trucks = all cargo vehicles with two axles and six ti res; Heavy trucks - all cargo vehicles with three or more axles.
3. All haul trucks assumed to be Heavy Trucks (3 axles or more).
4. Workers for Copco No. 1, Copco No. 2, and Iron Gate assumed to travel from Medford or Yreka. Maximum number of construction workers for the three facilities added to the Auto category for Copco Rd and I-5. Construction workers are double counted in the California segment of I-5 for conservative estimate.

3.3 Construction Work Hours

All activities at the Copco No. 1, Copco No. 2, and Iron Gate facilities, including the arrival and departure of vehicles delivering or removing materials from or to the site, will be carried out 24 hours a day, seven days a week.

3.4 Roads Authority

The roads authority for non-private roads in the Proposed Action area is Siskiyou County. The private network of roads leading to the Iron Gate Development via Ager Beswick Road have a private roads authority. Iron Gate Estates manages and maintains the private roads located within the route through Ager Road, Ager Beswick Road, and Lakeview Road, as well as other local private roads. The Renewal Corporation is currently working with the private authority for this network of roads and consulting them while conducting a construction improvement review of these roadways.

3.5 Site Security

3.5.1 The Renewal Corporation will implement the following measures with respect to site security. All security guardhouses are shown in Figure 3, 4, and 5 in Appendix A. Copco No. 1 Development

Construction access to the Copco No. 1 Development is shown in Figure 1 in Appendix A. Access is through Copco Access Road, which is regionally accessed via Copco Road, located north of the facility. A guard shack (i.e., manned security gate) and security pipe gate (i.e., unmanned arm gate) will be temporary installed on Copco Access Road and Old Left Abutment Access Road, respectively, to prevent unauthorized access to site (see Figure 3, Appendix A).

3.5.2 Copco No. 2 Development

Copco No. 2 Development access points are divided into dam access and powerhouse access. Copco No. 2 dam access will be through Copco Access Road regionally access via Copco Road from the north, similar to Copco No. 1 Development (Section 4.6.2). In addition, the dam will be accessed via a temporary spillway apron access track to be built during construction.

Copco No. 2 powerhouse facilities will be accessed through Daggett Road, which is regionally accessed via Copco Road. A guard shack (i.e., manned security gate) and security pipe gate (i.e., unmanned arm gate) will be temporary installed west of the Daggett Road Bridge and at the intersection of Daggett Road and the Woodstave Penstock Access Road, respectively, to prevent unauthorized access to site (see Figure 4, Appendix A).

3.5.3 Iron Gate Development

Construction access at the Iron Gate Development is shown in Figure 2 in Appendix A. Construction access is through Lakeview Road accessed via Ager Beswick Road southeast of the facility. PacifiCorp is installing a new permanent bridge adjacent to the existing Lakeview Bridge to provide construction access. Several security pipe gates (i.e., unmanned arm gate) and guard shacks (i.e., manned security gate) will be installed at the Iron Gate development (see Figure 5, Appendix A).

PacifiCorp reservoir operational staff and contractors will access the Iron Gate Development from Lakeview Road via Copco Road using the Lakeview Road Bridge.

3.6 Facility Users

A workforce of 180 people is needed by the Renewal Corporation for the pre- and post-reservoir drawdown construction activities at the Copco No. 1, Copco No. 2, and Iron Gate Developments. The peak workforce required during excavation of the dams may reach 200 people at each facility, depending on subcontractor and the Renewal Corporation personnel requirements. The estimated equipment that will be used by the Renewal Corporation for the removal of the dams and other facilities pre- and post-drawdown are shown in Table 3-8.

Table 3-8. Estimated Equipment at Copco No. 1, Copco No. 2, and Iron Gate Developments

NAME OF EQUIPMENT	IRON GATE	COPCO NO. 1	COPCO NO. 2
Crawler-mounted lattice boom crane, 100 to 120 ton or 150 to 200 ton, 160- to 200-foot boom	X	X	X
Rough terrain hydraulic crane, 35 to 75 ton	X	X	X
Hitachi hydraulic excavator, 180,000 to 240,000 lb, 6- to 8-cy bucket	X		
Mid-size hydraulic excavator, 28,000 to 60,000 lb, 1- to 2-cy bucket		X	X

NAME OF EQUIPMENT	IRON GATE	COPCO NO. 1	COPCO NO. 2
Cat 336 hydraulic track excavator, 80,000-lb, 3.5-cy bucket	X	X	X
Hydraulic track excavators, 65,000 to 120,000 lb, with Cat H120 hoe-ram, thumb, and sheer attachments	X	X	X
Cat 966 (52,000-lb, 5-cy bucket) or Cat 988 (65,000-lb, 6-cy bucket) articulated wheel-loaders	X	X	X
Cat 725, Cat 730, or Cat 740 articulated rear dump trucks, 30 ton (22 cy)	X	X	X
D-6, D-7, D-8, or D-9 standard crawler dozers	X	X	X
Front-end wheel loader, integrated tool carrier, 25,000 lb	X	X	X
D-8 support and knockdown dozer	X		
Cat TL943 rough terrain telescoping forklift	X	X	X
Rough terrain telescoping manlift	X	X	X
Cat 140, 14, or 16 motor-grader	X	X	
Flexifloat sectional barges	X	X	
Truck-mounted seed sprayer, 2,500 gallons	X	X	
On-highway, light duty diesel pickup trucks, ½-ton, and 1-ton crew	X	X	X
On-highway flatbed truck with boom crane, 16,000 lb	X	X	X
On-highway truck tractors, 45,000 lb	X	X	X
Off-highway water tanker, 5,000 gallons	X	X	X
On-highway water truck, 4,000 gallons		X	X
Wheel-mounted asphalt paver	X		
Self-propelled rubber tire and drum vibratory compactor, 5 to 15 ton	X		
Engine generators, 6.5 kW to 40 kW, diesel or gasoline	X	X	X
Air compressors, 100 psi, 185 to 600 cfm, diesel	X	X	X
Airtrack drill or hydraulic track drill		X	X
Hand-held drilling, cutting, and demolition equipment	X	X	X
Portable welders and acetylene torches	X	X	X
4-inch submersible trash pumps, electric	X	X	X
Light plants, 2,000 to 6,000 watt, 10 to 25 hp, diesel	X	X	

Notes:
Source: Information provided by KRRC (2020).t

3.6.1 Copco No. 1 Development

The estimated number of vehicle trips (VT), bulk quantity and load quantity per trip at the Copco No. 1 Development during construction are shown in Table 3-9.

Table 3-9. Copco No. 1 Development Vehicle Trip Estimation Summary

WASTE MATERIAL	IN SITU QUANTITY	BULK QUANTITY[1]	DISPOSAL SITE	QUANTITY PER TRIP	TOTAL TRIPS[2]
Dam & Powerhouse Concrete	53,000 cy	69,000 cy	On-site	40 cy/trip (unpaved road)	1,750 trips (2 miles RT)[3]
Dam & Powerhouse Mechanical/electrical	1,175 tons	--	Transfer station near Yreka	25 ton/trip (Copco Road)	50 trips (62 miles RT)
Building Material Debris	2 buildings 5,000 SF	--	Transfer station near Yreka	25 ton/trip (Copco Road)	5 trips (62 miles RT)
Power lines[2]	2.7 miles of 12-kV and 69-kV	--	Transfer station near Yreka	--	--

Notes:
Source: Information provided by the Renewal Corporation (2020).
1. Volumes increased 30 percent for concrete rubble, 20 percent for loose earth materials.
2. Total trips of concrete assume off-highway articulated trucks with a nominal load capacity of 40 cy. Total trips for hauling mechanical and electrical items and building material debris using truck tractor-trailers is based on 25 tons per trip. Truck trips for concrete disposal will only travel on project lands and private roads.
3. These trips will not occur on public roads

3.6.1.1 Construction Users

Construction personnel at the Copco No. 1 Development will arrive on site at approximately the same times every workday to maintain efficiency and reduce unexpected traffic. Construction personnel will arrive at the staging area and are permitted to be at site during the construction hours. A total of 105 vehicles associated with construction personnel will be on site daily, with up to 165 vehicles during peak construction.

3.6.1.2 Reservoir Operational Staff and Contractors

Reservoir operational staff and contractors will access Copco No. 1 through Copco Access Road via Copco Rd from the north. Two to four PacifiCorp personnel will be on site daily.

3.6.1.3 Oversized and Heavy Vehicle Access

Oversized and heavy vehicles will access the Copco No. 1 Development through Copco Access Road via Copco Road. Oversized and heavy vehicle access will not use roadways at the Copco

No. 1 Development. An access map for the Copco No. 1 Development is provided in Figure 1 in Appendix A.

3.6.2 Copco No. 2 Development

The estimated number of vehicle trips (VT), bulk quantity and load quantity per trip at the Copco No. 2 Development during construction are shown in Table 3-10.

Table 3-10. Copco No. 2 Development Vehicle Trip Estimation Summary

WASTE MATERIAL	IN SITU QUANTITY	BULK QUANTITY[1]	DISPOSAL SITE	QUANTITY PER TRIP	TOTAL TRIPS[2]
Dam Embankment Earth	8,840 cy	9,650 cy	On-site disposal area	40 cy/trip (unpaved road)	240 trips (2 miles RT)[3]
Dam Concrete	4,800 cy	6,240 cy	On-site disposal area		160 trips (2 miles RT)[3]
Powerhouse Concrete	1,850 cy	2,405 cy	On-site tailrace area	Dispose at site (no hauling)	0
Potential - Dam & Powerhouse Mechanical/ Electrical	260 tons 1,120 tons	--	Transfer station near Yreka	25 ton/trips (Copco Road)	6 trips (62 miles RT) 45 trips (56 miles RT)
Building Material Debris	5 residential buildings 26,400 SF	--	Transfer station near Yreka	20 cy/trips (Copco Road)	20 trips (56 miles RT)
Treated wood (wood- stave penstock)	550 tons	--	Landfill near Anderson, CA	20 cy/trip (Interstate 5)	55 trips (140 miles RT)
Power lines[2]	1.6 miles of 12-kV and 69-kV lines	--	Transfer station near Yreka	--	--

Notes:

Source: Information provided by the Renewal Corporation (2020)

1. Volumes increased 30 percent for concrete rubble, 20 percent for loose earth materials.
2. Total trips of earth fill or concrete assume off-highway articulated trucks with a nominal load capacity of 40 cy. Total trips for hauling mechanical and electrical items using truck tractor-trailers is based on 25 tons per trip. Truck trips for earth and concrete disposal will only travel on project lands and private roads.
3. These trips will not occur on public roads.

3.6.2.1 Construction Users

Construction personnel at the Copco No. 2 Development will arrive on site at approximately the same times every workday to maintain efficiency and reduce unexpected traffic. Construction

personnel will arrive at the staging area and are permitted to be at site during the construction hours. A total of 105 vehicles associated with construction personnel will be on site daily, with up to 165 vehicles during peak construction.

3.6.2.2 Reservoir Operational Staff and Contractors

Reservoir operational staff and contractors will access Copco No. 2 dam through Copco No. 2 Access Road via Copco Access Road and Copco Road from the north.

Reservoir operational staff and contractors will access the Copco No. 2 powerhouse facilities by Daggett Road via Copco Road. Two to six PacifiCorp personnel will be on site, depending on substation and transmission related activities.

3.6.2.3 Oversized and Heavy Vehicle Access

Oversized and heavy vehicles will access the Copco No. 2 dam through Copco No. 2 Access Road via Copco Access Road and Copco Road. In addition, oversized and heavy vehicles will access the construction site at Copco No. 2 dam via a temporary spillway apron access track. For the diversion dam, access will be through Copco Road via Copco No. 1 Village. An access map for the Copco No. 2 Development is provided in Figure 1 in Appendix A.

Oversized and heavy vehicles will access the Copco No. 2 powerhouse facilities via Daggett Road. This route includes traveling across the newly constructed Daggett Road Bridge which will be constructed for heavy loads.

3.6.3 Iron Gate Development

The estimated number of vehicle trips (VT), bulk quantity and load quantity per trip at the Iron Gate Development during construction are shown in Table 3-11.

Table 3-11. Iron Gate Development Vehicle Trip Estimation Summary

WASTE MATERIAL	IN-SITU QUANTITY	BULK QUANTITY[1]	DISPOSAL SITE	QUANTITY PER TRIP	TOTAL TRIPS[2]
Dam Embankment Earth	193,000 cy	232,000 cy	On-site spillway	60 cy/ trip (unpaved road)	3,900 trips (0.5 mile RT)[3]
Dam Embankment Earth	916,000 cy	1,100,000 cy	On-site disposal area	20 cy/ trip (unpaved road)	18,300 trips (2 miles RT)[3]
Concrete	6,500 cy	7,800 cy	On-site disposal area	20 cy/trip (unpaved road)	390 trips (2 miles RT)
Mechanical/ Electrical	1,200 tons	--		25 ton/trip (Copco Road)	50 trips (54 miles RT)

Building Material Debris	4 buildings 2,700 SF	--	Transfer station near Yreka, CA		10 trips (54 miles RT)
Power lines	7.2 miles of 12-kV and 69- kV line			--	--

Notes:

Source: Information provided by the Renewal Corporation (2020).

1. Volumes increased 30 percent for concrete rubble, 20 percent for loose earth materials.
2. Peak daily trips for each site are based on the number of vehicles (units) shown, operating in one 10-hour shift.
3. Total trips of earth fill assume off-highway articulated trucks with a nominal load capacity of 60 cy. Total trips of concrete assume off-highway articulated trucks with a nominal load capacity of 20 cy. Total trips for hauling mechanical and electrical items using truck tractor-trailers is based on 25 tons per trip.

3.6.3.1 Construction Users

Construction personnel at the Iron Gate Development will arrive on site at approximately the same times every workday to maintain efficiency and reduce unexpected traffic. Construction personnel will arrive at the staging area and are permitted to be at site during the construction hours. A total of 105 vehicles associated with construction personnel will be on site daily, with up to 165 vehicles during peak construction.

3.6.3.2 Reservoir Operational Staff and Contractors

Reservoir operational staff and contractors will access the Iron Gate Development through Lakeview Road via Copco Road. Two to four PacifiCorp personnel will be on site daily, with up to 12 depending on fish related activities.

3.6.3.3 Oversized and Heavy Vehicle Access

Oversized and heavy vehicles will access the Iron Gate Development through Lakeview Road via Ager Beswick Road. Oversized and heavy vehicles will not travel across the Lakeview Road Bridge at Klamath River. An access map for the Iron Gate Development is provided in Figure 2 in Appendix A. The Renewal Corporation will be subject to a single comprehensive Project-level permit with specific documented routes rather than individual per load permits. Load weights are anticipated to carry up to 60,000 lbs per tandem axle. The Renewal Corporation will provide a forecast schedule of the anticipated oversize hauling so that the County can witness loads passing on the roadway and inspect for roadway damage at the County's discretion. The Renewal Corporation will maintain a log of all loads that are greater than or equal to a fully loaded 18-wheel truck and trailer with an approximate overall weight of 80,000 lbs. hauled on Copco Road, Ager Road, Yreka Ager Road, and/or Ager Beswick Road.

3.7 Adjoining Private Property Access

Access to and from private property will be maintained at all times. If access to private property need to be limited on be temporarily basis, the Renewal Corporation will make these arrangements in advance with the effected private property owner. Lakeview road will be closed west of the Iron Gate Estates ownership boundary during periods of heavy hauling. Residents

of Iron Gate Estates will still be able to access their property using the eastern entrance off of Ager-Beswick Road.

3.8 Roadway Closures

The Renewal Corporation may close Copco Road during construction improvements at the bridges and culverts (Table 3-3). These closures, if necessary, will be of limited duration. Prior to road closure there will be a 72-hour public notice.

3.9 Temporary Roadways and Works

3.9.1 Copco No. 1 Development

At the Copco. No. 1 Development, Copco Access Road is a dirt road with a hairpin bend. The lower side of access road is very steep with no barrier protection. The Renewal Corporation will re-grade the Copco Access Road by clearing and grubbing the available space between the toe of the higher hillside and the existing edge of the dirt/gravel road to provide a wider road section for construction and hauling trucks. The access road will be limited to one-way traffic with turnouts. Turnarounds for haul trucks will be provided at the staging areas for the powerhouse and the disposal site.

Ager Beswick Road at the Copco No. 1 site may be used by the Renewal Corporation for barge access to the reservoir. The road is not anticipated to be used for hauling but may be used for mobilization of a barge at Mallard Cove on the southern shore. Access to the boat ramp is likely to require minor improvements to the Mallard Cove access road by the Renewal Corporation to Ager Beswick Road. This may require the Cove to be temporarily closed for a few days for specific hours for dredging access to enable placing a barge mounted crane in the reservoir.

3.9.2 Copco No. 2 Development

At the Copco No. 2 Development, Copco Access Road will be improved by the Renewal Corporation as described in Section 4.2. In addition, the Renewal Corporation will construct a temporary spillway apron access track that will provide access to a temporary work platform during construction at Copco No. 2 dam.

Mobilization and hauling at the Copco No. 2 powerhouse facilities will be through Daggett Road, which will have two construction improvements for access and haul purposes. The first improvement includes improving the culvert at Fall Creek. The Renewal Corporation developed an open bottom, steel-plate arch culvert designated this location which meets NOAA criteria for fish passage. The second improvement on Daggett Road includes constructing a permanent access bridge at the current location of the Daggett Road Bridge. The new bridge will be a modular steel bridge installed on drilled shaft supports on each abutment. The new bridge will be located on the upstream side of the existing bridge.

3.9.3 Iron Gate Development

A temporary access road and temporary bridge will be built over the existing fish ladder at the base of the Irongate Dam. This access way will allow workers and equipment to access the downstream opening of the tunnel to complete pre-drawdown improvements. The Renewal Corporation will maintain and modify Lakeview Road and the network of private roads that connect the Iron Gate Development to Ager Beswick Road.

3.10 Traffic Control Personnel

The Renewal Corporation will require that all traffic control personnel at the Copco No. 1, Copco No. 2, and Iron Gate Developments will be trained in the proper fundamentals of flagging. Signaling directions used by flaggers will conform to the specifications provided in the California Code of Regulations Title 8, Division 1, Chapter 4, Subchapter 4, Article 11, Section 1599 – Flaggers. The Renewal Corporation will require traffic control personnel to follow specifications in the California Manual on Uniform Traffic Control Devices. The training and instructions will be based on the work site conditions and include the following:

- Flagger equipment which must be used.
- Layout of the work zone and flagging station.
- Methods to signal traffic to stop, proceed or slow down,
- Methods of one-way traffic control.
- Trainee demonstration of proper flagging methodology and operations.
- Emergency vehicles traveling through the work zone.
- Handling emergency situations.
- Methods of dealing with hostile driver.,
- Flagging procedures when a single flagger is used (when applicable).

Documentation of the training will be maintained consistent with Section 3203 of the California Code of Regulations, Injury Illness and Prevention Program of the General Industry Safety Orders. Flaggers will be trained by persons with the qualifications and experience necessary to effectively instruct the employee in the proper fundamentals of flagging moving traffic.

3.11 Signage

The Renewal Corporation will implement the following measures with respect to signage. Roadway signs will be used to inform the public where any road changes from construction works. Advanced warning signs (e.g., road work ahead, shoulder work, workers, etc.) will be used to indicate the type of work or activity the driver can expect. If road closures are needed at Copco Road at Dry Creek and Fall Creek during construction activities, the Renewal Corporation will provide notification to residential traffic and emergency services at least two weeks prior to the initiation of work.

3.12 Monitoring of Traffic Control Measures

During each stage of construction at the Copco No. 1, Copco No. 2, and Iron Gate Developments, the Renewal Corporation will check all signs and required traffic control measures for compliance with the California Traffic Management Plan.

3.13 Road Design

The Renewal Corporation will implement the following measures with respect to road design. All road designs will account for current traffic configuration, road safety, and traffic network impacts. All road designs will meet applicable safety, engineering, and design guidelines (i.e., AASHTO design standards).

The following road design criteria will be used for the design of temporary access roadways:

- Single-lane road, 15 ft wide with one 3-ft-wide safety berm.
- Safety berm when road segment is exposed to side slope.
- 35-foot minimum curve radius.
- 20% maximum road grade.

4.0 Traffic Control Locations

Areas of traffic control have been identified for each facility. Traffic control measures in these areas to be provided by the Renewal Corporation are discussed below and will be updated as required. The Renewal Corporation will provide temporary traffic control measures and warning signs to notify the public of construction works and flaggers equipped with warning signs for the removal of recreation sites adjacent to the Iron Gate and Copco Reservoirs.

Table 4-1. California Recreation Site Demolition Summary

RECREATION SITE	RESERVOIR	ROAD
Overlook Point	Iron Gate Reservoir	Copco Road
Mirror Cove	Iron Gate Reservoir	Copco Road
Juniper Point	Iron Gate Reservoir	Copco Road
Camp Creek	Iron Gate Reservoir	Copco Road
Wanaka Springs	Iron Gate Reservoir	Copco Road
Jenny Creek	Iron Gate Reservoir	Copco Road
Fall Creek	Iron Gate Reservoir	Copco Road
Copco Cove	Copco Lake	Copco Road

Note: This is not a complete list of all recreation sites to be removed. This list only includes recreations sites where minor temporary traffic control may be needed.

4.1 Copco No. 1 and No. 2 Development

Areas of traffic control at the Copco No. 1 and Copco No. 2 Developments have been identified and are shown in Figure 1 in Appendix A.

4.2 Iron Gate Development

Areas of traffic control at the Iron Gate Development have been identified and are shown in Figure 2 in Appendix A.

5.0 Site Traffic Rules

The Renewal Corporation will implement the following site traffic rules. During mobilization and hauling activities throughout the Proposed Action area all personnel will be required to follow the appropriate speed limits. Copco Road from I-5 to Daggett Road has a speed limit of 35 mph and the stretch from Daggett Road to Ager Beswick Road has a speed limit of 20 mph, unless otherwise posted. For areas where public access is closed for heavy hauling operations, speed limits will be set according to Kiewit's best practices for hauling and safe operations. Speed limits will be reinforced at the site induction.

5.1 Copco No. 1 Development

5.1.1 Site Speed Limits

Signage indicating the appropriate speeds will be posted on all roadways and all personnel are always required to follow the speed limits at the Copco No. 1 Development. The speed limit is 15 mph on all roads at the Copco No. 1 Development unless otherwise posted. Speed limits will be evaluated for effectiveness and adjusted to maintain and prioritize safety during construction works. Speed limits may be higher as determined by Kiewit to allow for efficient hauling operations. Appropriate delineation and signage will be provided on haul roads.

5.1.2 Access Roads/Haul Roads

All personnel on site will be instructed to only use the access and haul roads and avoid traveling off the existing roadways, or on the shoulders of the road. Roadways will be delineated with markings such as windrows, bunting, or flagging. Haul roads will be constructed with the following design:

- Appropriate geotechnical materials will be used for all road construction,
- Bends, corners, and turns will be constructed to maintain equipment stability during regular use, and
- Haul roads will comply with the Renewal Corporation and Kiewit requirements and recommendations and will be inspected regularly.

5.1.3 Maximum Loads

Trucks will be loaded with a safe load distribution to avoid spillage. The driver must be in the vehicle throughout the loading process.

5.1.4 Parking

Parking will be restricted to specific designated areas as determined as work progresses and will be chosen to avoid proximity to existing waterways. When entering the staging areas for parking, all personnel will follow all site traffic rules provided in this California Traffic Management Plan and in the Proposed Action Induction (Section 7.2).

5.1.5 Private Vehicles

Private vehicles will be allowed to park only in designated parking areas as determined as the work progresses and are not allowed on the construction site unless approved by the Kiewit Project Manager. If approved on site, private vehicles will adhere to all instructions and safety requirements designated in the California Traffic Management Plan. Private vehicles will be escorted if traveling through or to any operational areas.

There are public access roads adjacent to the Copco No. 1 construction site. Public access will be maintained on these access roads.

5.2 Copco No. 2 Development

5.2.1 Site Speed Limits

Signage indicating the appropriate speeds will be posted on all roadways and all personnel are always required to follow the speed limits at the Copco No. 2 Development. The speed limit of Copco Road from Ager Road to Daggett Road (14.6 miles) is 35 mph. The speed limit is 15 mph on all roads at the Copco No. 2 Development unless otherwise posted. Speed limits will be evaluated for effectiveness and adjusted to maintain and prioritize safety during construction works. Speed limits may be higher as determined by Kiewit to allow for efficient hauling operations. Appropriate delineation and signage will be provided on haul roads.

5.2.2 Access Roads/Haul Roads

All personnel on site will be instructed to only use the access and haul roads and avoid traveling off the existing roadways, or on the shoulders of the road. Roadways will be delineated with markings such as windrows, bunting, or flagging. Haul roads will be constructed with the following design:

- Appropriate geotechnical materials will be used for all road construction.
- Bends, corners, and turns will be constructed to maintain equipment stability during regular use, and
- Haul roads will comply with PacifiCorp and Kiewit requirements and recommendations and will be inspected regularly.

5.2.3 Maximum Loads

Trucks will be loaded with a safe distribution to avoid spillage. The driver must be in the vehicle throughout the loading.

5.2.4 Parking

Parking will be restricted to specific designated areas as determined as the work progresses and will be chosen to avoid close proximity to existing waterways. When entering the staging areas for parking, personnel will follow all site traffic rules provided in this California Traffic Management Plan and in the Proposed Action induction (Section 8.2).

5.2.5 Private Vehicles

Private vehicles will be allowed to park only in designated parking areas and are not allowed on the construction site unless approved by the Kiewit Project Manager. If approved on site, private vehicles will adhere to all instructions and safety requirements designated in the California Traffic Management Plan. If traveling through or to any operational areas, private vehicles will be escorted.

5.3 Iron Gate Development

5.3.1 Site Speed Limits

Signage indicating the appropriate speeds will be posted on all roadways and all personnel are always required to follow the speed limits at the Iron Gate Development. The speed limit on Ager Beswick Road is 25 mph. The speed limit is 15 mph on all roads, including Lakeview Road, at the Iron Gate Development unless otherwise posted. Speed limits will be evaluated for effectiveness and adjusted to maintain and prioritize safety during construction works. Speed limits may be higher as determined by Kiewit to allow for efficient hauling operations. Appropriate delineation and signage will be provided on haul roads.

5.3.2 Access Roads/Haul Roads

All personnel on site will be instructed to only use the access and haul roads and avoid traveling off the existing roadways, or on the shoulders of the road. Roadways will be delineated with markings such as windrows, bunting, or flagging. Haul roads will be constructed with the following design:

- Appropriate geotechnical materials will be used for all road construction.
- Bends, corners, and turns will be constructed to maintain equipment stability during regular use, and
- Haul roads will comply with the Renewal Corporation and Kiewit requirements and recommendations and will be inspected regularly.

5.3.3 Maximum Loads

Trucks will be loaded with a safe distribution to avoid spillage. The driver must be in the vehicle throughout the loading.

5.3.4 Parking

Parking will be restricted to specific designated areas as determined as the work progresses and will be chosen to avoid proximity to existing waterways. When entering the Brush Creek Avenue and Lakeview Road staging areas for parking, personnel will follow all site traffic rules provided in this California Traffic Management Plan and in the Proposed Action induction (Section 7.2).

5.3.5 Private Vehicles

Private vehicles will be allowed to park only in designated parking areas and are not allowed on the construction site unless approved by the Kiewit Project Manager. If approved on site, private vehicles will adhere to all instructions and safety requirements designated in the California Traffic Management Plan. If traveling through or to any operational areas, private vehicles will be escorted.

6.0 Requirements for Site Access

6.1 Personnel

The Renewal Corporation will require all personnel entering the Copco No. 1, Copco No. 2, and Iron Gate Developments to attend and complete a Proposed Action Induction. Visitor inductions will be arranged but require an inducted escort when at the site. Access to the site during non-regular hours must be arranged in advance with The Kiewit Project Manager.

6.2 Light Vehicles

All light vehicles on site are required to have reversing alarms. Flashing lights are required on light vehicles when traveling on haul roads.

7.0 Training and Awareness

7.1 Training, Awareness, and Competency

The Renewal Corporation will require training for all personnel prior to commencing work within the Limits of Work. The level of training will be commensurate with the level of individual risk their responsibilities are likely to entail. Trainings will include (as appropriate):

- Environmental and Safety policies and site Management Plans as well as environmental roles and responsibilities.
- The significance of environmental impacts caused by individual roles and activities,

- Incident management, and
- Potential consequences of non-conformance.

This plan will be discussed at orientation and will be updated as needed.

7.2 Inductions

7.2.1 Proposed Action Inductions

The Renewal Corporation will require all personnel to undergo an Induction to cover the key requirements of the Workplace Safety Management Plan and California Traffic Management Plan. The Induction will also cover safety, environment, community, and an overview of this Plan and reinforce it is the responsibility of all personnel to adhere to the safety and traffic requirements. The Induction will include:

- Overview of the site California Traffic Management Pla.,
- PPE requirement.,
- Contact details.
- Incident management and notification.
- Hours of work.
- Safety policies.
- Designated parking areas.
- Speed limits.
- Community protocol, and
- Emergency detour plans.

7.2.2 Visitor Inductions

The Renewal Corporation will require visitors to undergo a visitor's induction and their host is responsible for all actions and conduct of the visitor. During all times, visitors will be accompanied by personnel who have previously undergone Induction and safety training.

7.3 Toolbox Talks

Toolbox talks will be conducted regularly by the Renewal Corporation to improve on safety, health, quality, and environmental issues. Talks will focus on the current or upcoming work and will highlight specific safety aspects and actions being undertaken as part of ongoing management, training, and development. In general, toolbox talks will cover:

- An overview of current works.
- Traffic and access.
- Entry/exit point locations.
- Parking areas.
- If other persons are required to enter site that day, and
- Incidents, or potential incidents and possible implications.

8.0 References

Federal Energy Regulatory Commission (FERC). 2018. Order Amending License and Deferring Consideration of Transfer Application FERC Project Nos. 2082-062 and 14803-000. 162 FERC 61,236. Washington, DC, Federal Energy Regulatory Commission, Office of Energy Projects, Division of Hydropower Licensing.

Knight Piésold. 2022a. Design Report. Prepared for Klamath River Renewal Project. June.

Knight Piésold. 2022b. Klamath River Renewal Project Existing Conditions Assessment Report – Volume VII (Rev 0).

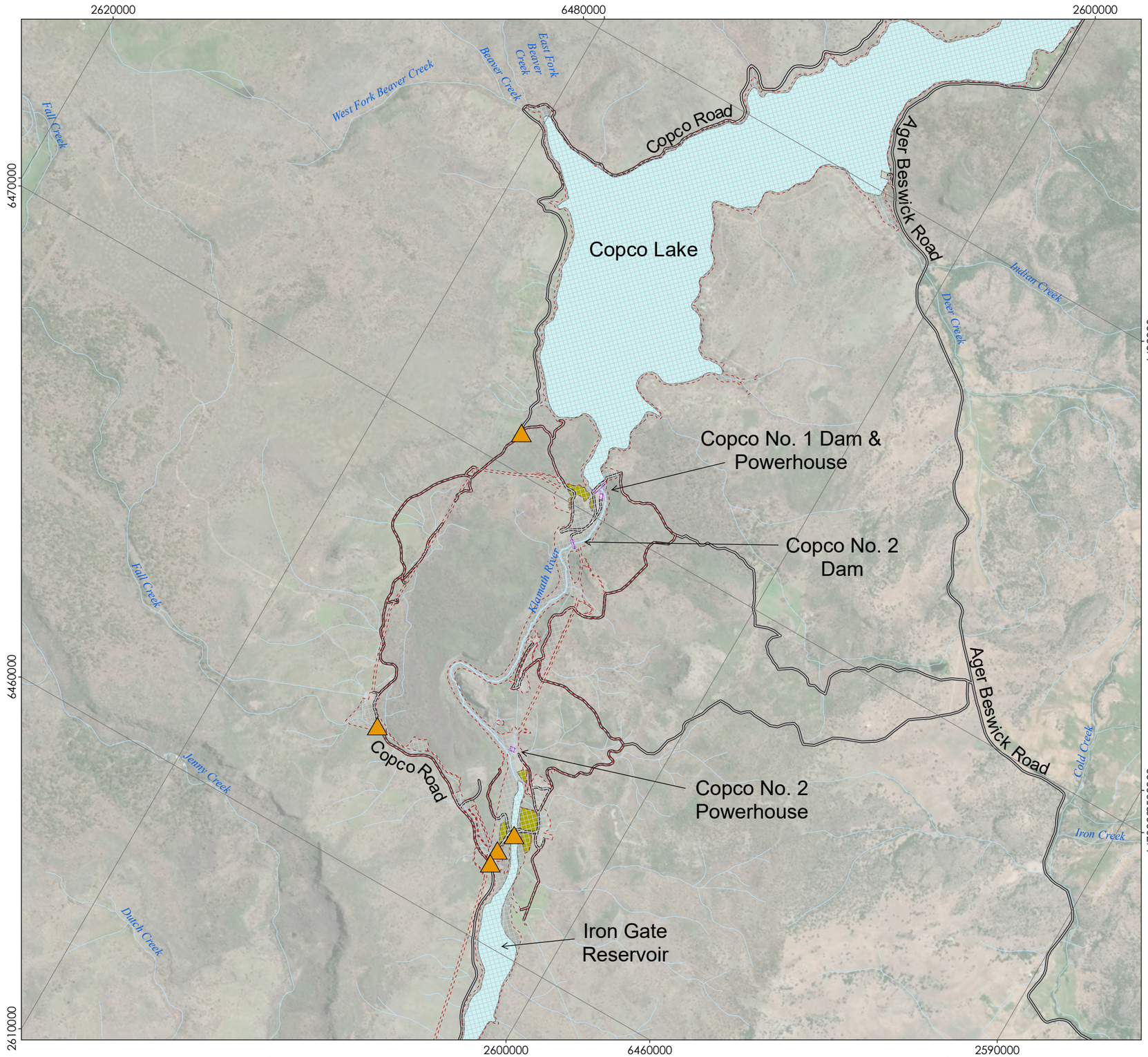
PacifiCorp. 2004. Environmental Report. Final License Application, Volume 2, Exhibit E. Klamath Hydroelectric Project (FERC Project No. 2082).

Siskiyou County. 2020. Siskiyou County MOU – Roads, Bridges, Traffic Control.

United States Department of Interior (US DOI), California Department of Fish and Game (CDFW). 2012. Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report Volume II. Technical Report. Watershed Code: 180102.

Appendix A

Access and Security Maps



KLAMATH
RIVER RENEWAL
CORPORATION

Figure 1: Access Map -
Copco No.1 and No. 2 Facilities

N

0 0.25 0.5 0.75 1 Miles

- Temporary Traffic Management
- Limits of Work
- Project Features
- Staging Areas
- Access Routes
- Reservoir Boundaries
- Streams

November 12, 2020
(At original document size of 11x17)
1:29,530

Notes
1. *Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US*
2. *Data Sources:*
Temporay Traffic Management: Knight Piesold; Limits of Work: McMillen-Jacobs, CAD 90 Design draft; Access Routes: Knight Piesold, 100 Design Drawings; Staging Areas: CDM, 60 Design; Streams and Reservoir: NHD.
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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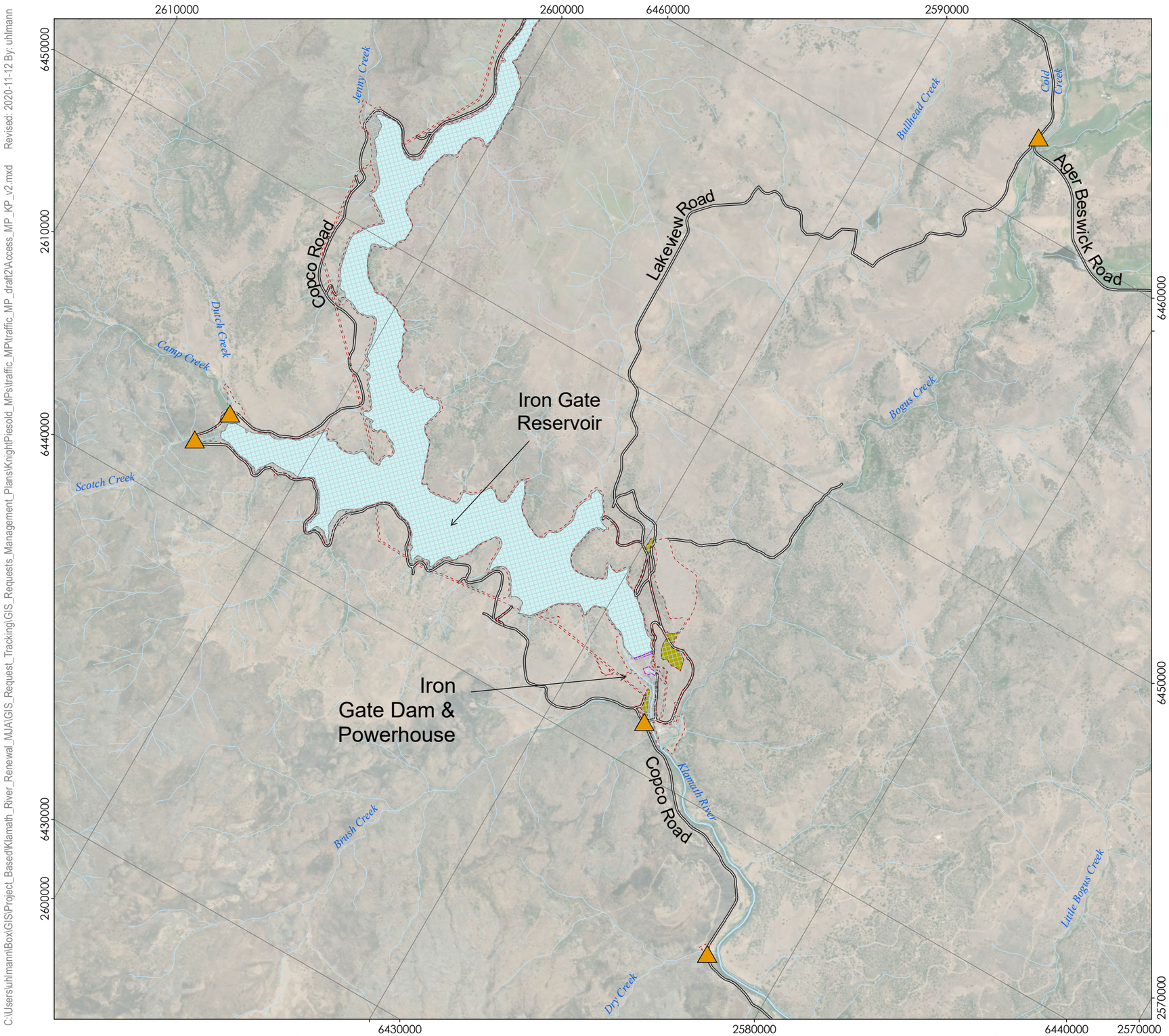

KLAMATH RIVER RENEWAL CORPORATION

Figure 2: Access Map - Iron Gate Facilities

N

0 0.25 0.5 0.75 1 1.25 Miles

- Temporary Traffic Management
- Limits of Work
- Project Features
- Staging Areas
- Access Routes
- Reservoir Boundaries
- Streams

November 12, 2020

(At original document size of 11x17)

1:36,920

Notes

1. *Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US*

2. *Data Sources:*

Temporay Traffic Management: Knight Piesold; Limits of Work: McMillen-Jacobs, CAD 90 Design draft; Access Routes: Knight Piesold, 100 Design Drawings; Staging Areas: CDM, 60 Design; Streams and Reservoir: NHD.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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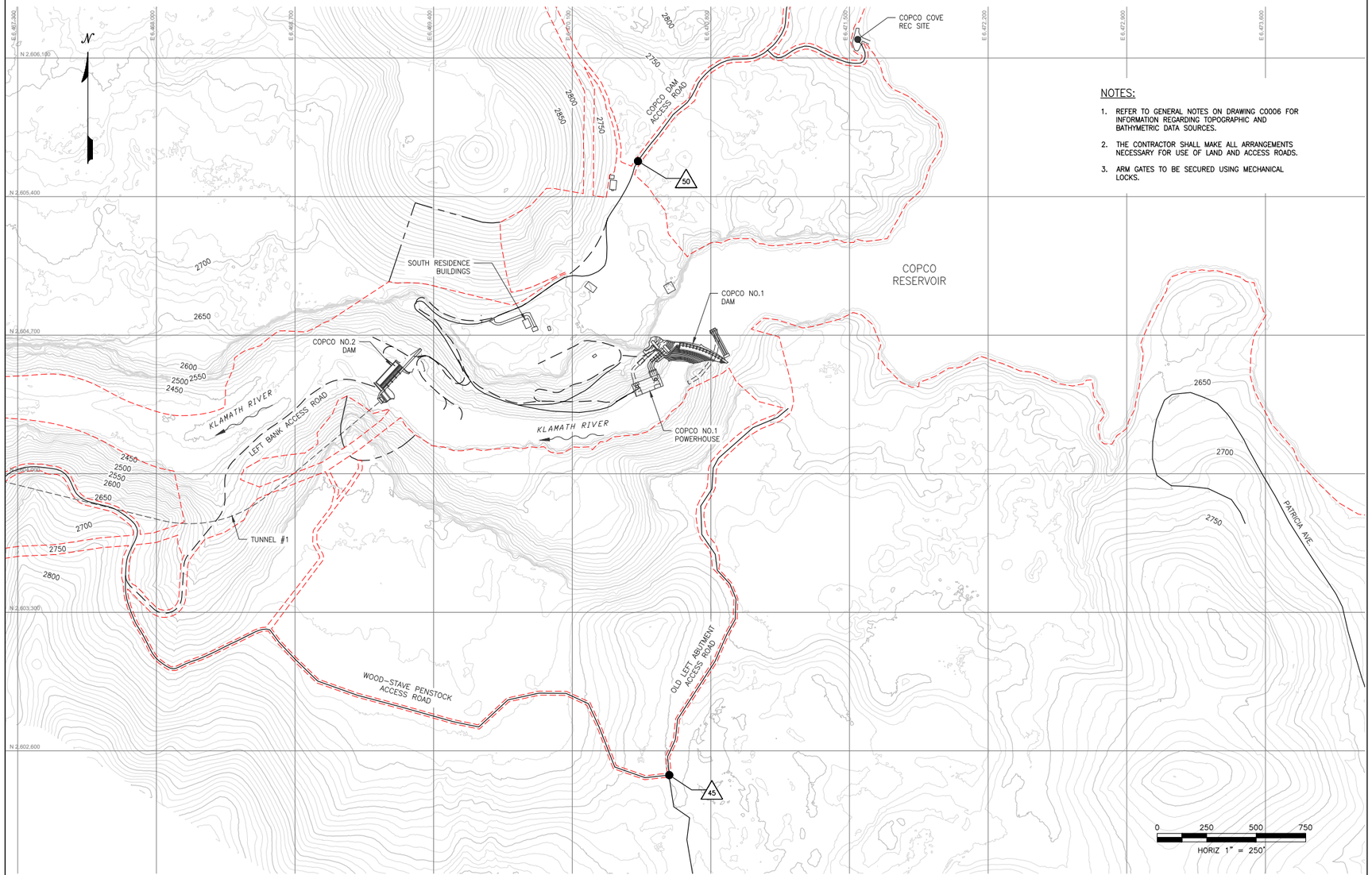


NOTES:

1. REFER TO GENERAL NOTES ON DRAWING C0006 FOR INFORMATION REGARDING TOPOGRAPHIC AND BATHYMETRIC DATA SOURCES.
2. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS NECESSARY FOR USE OF LAND AND ACCESS ROADS.
3. ARM GATES TO BE SECURED USING MECHANICAL LOCKS.

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project

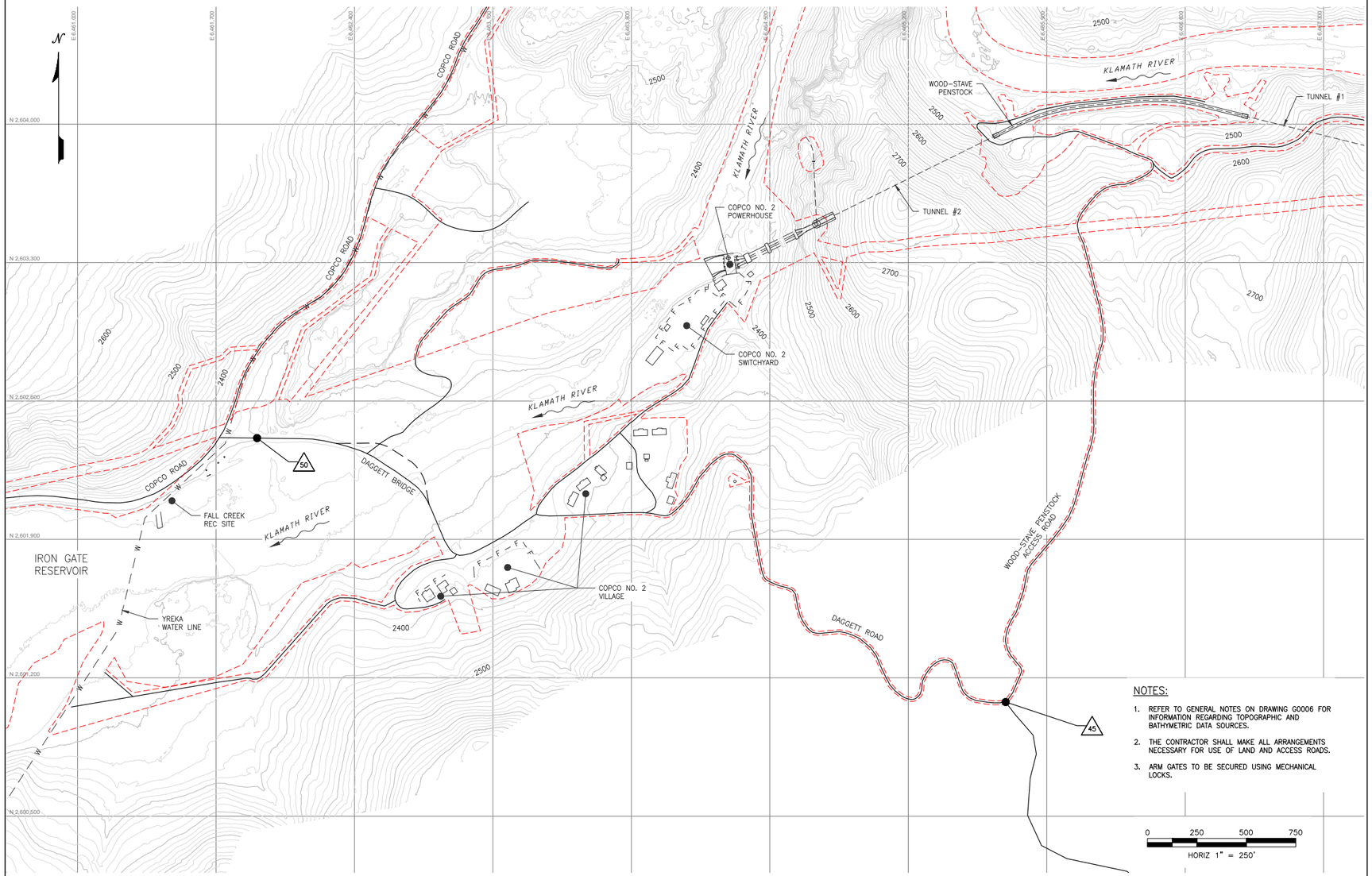
Figure 3: Security Map - Copco No. 1

November, 2022

(At original document size of 11x17)

LEGEND:

- EXISTING ACCESS ROAD
- NEW ACCESS ROAD
- LIMITS OF WORK
- TO BE CONSTRUCTED
- 45 UNMANNED ARM GATE
- 50 MANNED SECURITY GATE



NOTES:

1. REFER TO GENERAL NOTES ON DRAWING G0006 FOR INFORMATION REGARDING TOPOGRAPHIC AND BATHYMETRIC DATA SOURCES.
2. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS NECESSARY FOR USE OF LAND AND ACCESS ROADS.
3. ARM GATES TO BE SECURED USING MECHANICAL LOCKS.

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project

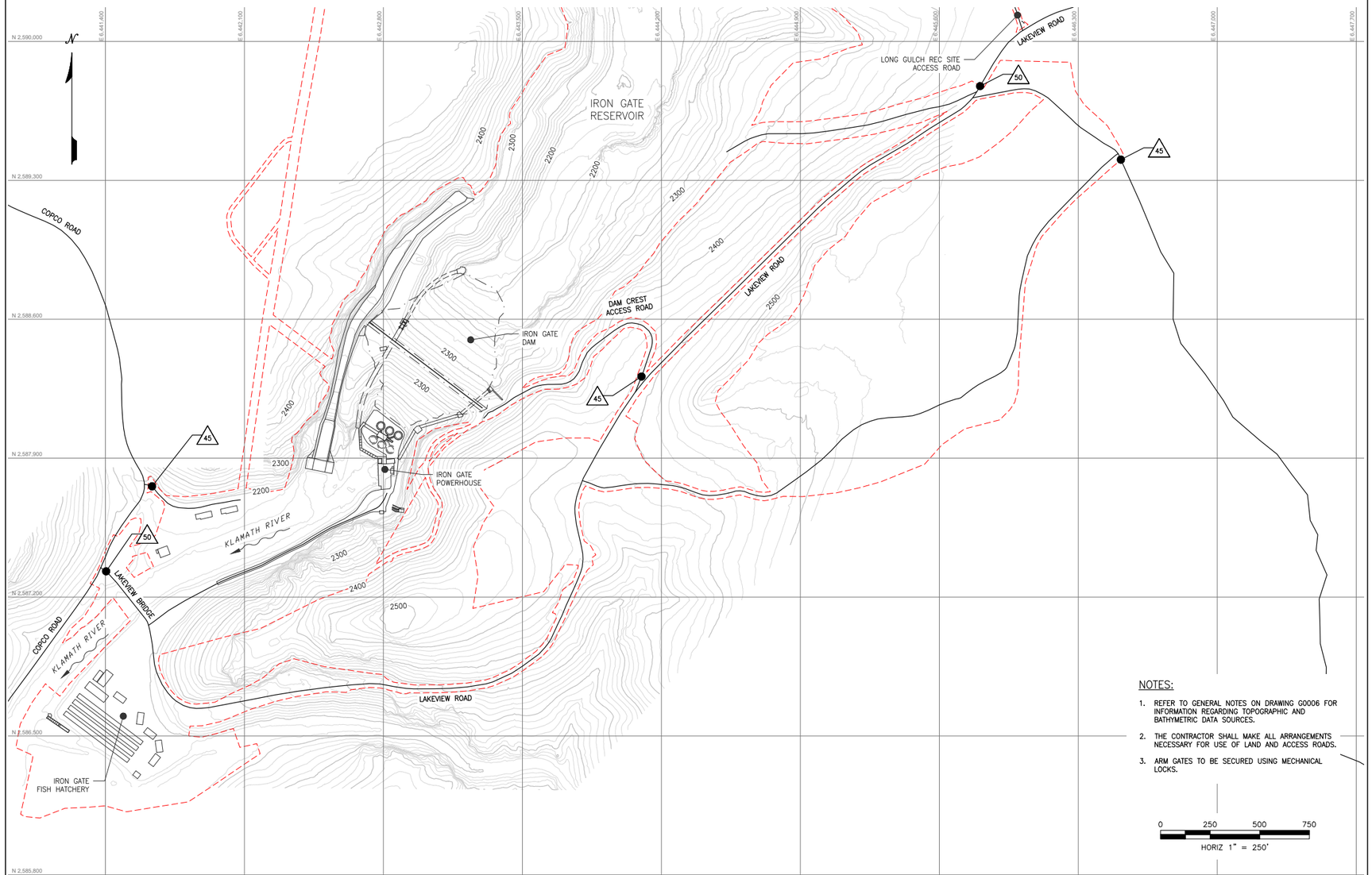
Figure 4: Security Map - Copco No. 2

November, 2022

(At original document size of 11x17)

LEGEND:

- EXISTING ACCESS ROAD
- NEW ACCESS ROAD
- LIMITS OF WORK
- TO BE CONSTRUCTED
- UNMANNED ARM GATE
- MANNED SECURITY GATE



NOTES:

1. REFER TO GENERAL NOTES ON DRAWING G0006 FOR INFORMATION REGARDING TOPOGRAPHIC AND BATHYMETRIC DATA SOURCES.
2. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS NECESSARY FOR USE OF LAND AND ACCESS ROADS.
3. ARM GATES TO BE SECURED USING MECHANICAL LOCKS.

0 250 500 750

HORIZ 1" = 250'

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project

Figure 5: Security Map - Iron Gate

November, 2022

(At original document size of 11x17)

LEGEND:

- EXISTING ACCESS ROAD
- LIMITS OF WORK
- TO BE CONSTRUCTED
- 45 UNMANNED ARM GATE
- 50 MANNED SECURITY GATE

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Appendix C

Emergency Response Plan

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project
FERC Project No. 14803

Emergency Response Plan

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

Prepared by:
RES
1210 G Street
Sacramento, CA 95814

Kiewit Infrastructure West
4650 Business Center Drive
Fairfield, CA 94534

December 2022

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Table of Contents

Appendices

1.0 Introduction

The Emergency Response Plan described herein is a subplan of the Construction Management 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 Emergency Response Plan is to define roles, responsibilities, and procedures to be followed in the event of an emergency during implementation of the Proposed Action. This Plan will minimize hazards to employees, the public or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous materials, waste or constituents to air, soil, surface water or ground water. This Plan is designed to incorporate flexibility to tailor an appropriate response to meet a particular emergency.

This Plan pertains to work that the Renewal Corporation and its contractors Kiewit and RES (Renewal Corporation) will conduct in support of the Proposed Action. The Renewal Corporation will maintain safety staff that will be on-site when active work is being conducted. At times when all companies are working on the site concurrently, representative safety personnel will coordinate and collaborate to maintain a safe working environment for all employees. This Emergency Response Plan, therefore, outlines procedures that all companies will follow throughout the duration of work to respond to emergencies and minimize hazards to on-site workers and the public.

When public outreach is required, the Renewal Corporation will coordinate with the public to ensure that local environmental justice communities are included in emergency planning. Public outreach communication will be in English, Spanish, and Hmong.

1.2 Relationship to Other Management Plans

The Emergency Response Plan is supported by elements of the following management plans for effective implementation: Water Supply Management Plan, Waste Disposal and Hazardous Materials Management Plan, Construction Management Plan (sub-plans), and Health and Safety Plan. So as not to duplicate information, elements from these other management plans are not repeated herein but are, where appropriate, referred to in this Emergency Response Plan.

2.0 Emergency Response Plan Measures

2.1 Process

Every employee on the project site will be trained on and familiar with the measures detailed in this Plan. In addition, the project Safety Director or Project Director will be tasked with assessing an emergency and making sure the correct action plan and steps are followed. General emergency procedure steps and documentation examples are in Appendix A.

The following items should be considered in assessing an emergency:

- Time
- Location
- Nature
- Duration
- Personnel exposures
- Equipment involved
- Root cause
- Fire
- Weather
- Life hazard
- Additional assistance required/available
- Notification needed, including those to offsite and/or regulatory agencies

2.1.1 Identification, Evaluation, and Emergency Level Classification

Either the Safety Director or Director will classify the emergency. The classification system for the Emergency Response Plan is based on three emergency incident classes: (1) UNUSUAL EVENT for a Minor Incident, (2) SITE EMERGENCY or (3) GENERAL EMERGENCY for a Major Incident. The classes determine the steps to be taken by facility personnel and the actions which are taken by offsite support organizations. An emergency class is an indicator of conditions at the site. Inputs to the emergency classification system include the status of the site and systems, hazardous materials in the area, release of hazardous materials, fires, natural phenomenon, medical emergencies, and other hazards affecting both site personnel and the public.

The emergency classes are also used by offsite authorities to determine what level of response is required by their respective organizations. Protective actions taken on behalf of members of the public are the responsibility of local/state governments. Protective actions taken by local/state governments are based on projected or potential hazards to the public. The projected or potential hazards are based on considerations such as stability of site/equipment, source of chemical/hazardous spill, chemicals/hazardous substances released, emission rates, concentration, or meteorological conditions.

MINOR - UNUSUAL EVENT is normally an emergency capable of being managed solely by the site staff. This class also could be an early notification of events that could lead to more serious consequences or might indicate more serious conditions that have not yet fully developed. This class also includes events of potential public concern. An UNUSUAL EVENT is also used to denote certain events that require notification of appropriate site/Corporate personnel so that regulatory reporting requirements may be addressed.

MAJOR - SITE EMERGENCY reflects conditions in which significant hazardous conditions are occurring or are likely to occur, but do not necessarily have a direct impact on the public. In this situation, offsite emergency response personnel may or may not be required.

MAJOR - GENERAL EMERGENCY involves an actual or imminent hazardous condition which has a direct impact on the public and/or requires offsite support.

Emergency class descriptions are provided below along with the basic actions to be carried out by personnel for each emergency class.

2.1.1.1 Minor - Unusual Event

2.1.1.1.1 Class Description:

Incidents are in progress or have occurred which indicate a potential degradation of the level of safety, health or the environment of the site, or the public has notified local/state agencies of an incident. No hazardous conditions or release of hazardous material requiring offsite response or monitoring are expected unless further degradation of safety, health and environment occurs.

2.1.1.1.2 Personnel Actions

- Assess and Respond
- Make immediate notifications, if applicable
- Augment personnel resources, as needed
- Escalate to a more severe class or close out with a verbal summary to those organizations initially notified, as appropriate

2.1.1.1.3 Initiating Conditions for Minor Event

- Fire
    - On-site fire lasting less than ten (10) minutes
- Hazardous Materials
    - Hazardous material release less than Federal reporting quantities, but reportable to State, posing no safety or health threat
- Loss of Environmental Control
    - Unusual release of site materials to the environment
    - Flammable gas or liquid release with no ignition
    - Non-hazardous odor released off-site
- Natural Phenomenon
    - Severe weather condition (tornado, hurricane, strong winds, etc.) predicted for site within twelve (12) hours
    - Offsite wildlife encroachment

- Unusual Operations and Other Hazards
    - Medical emergency requiring transport
    - Security (bomb) threat
    - Explosion (unidentified)
    - Loss of telephone communications, or
    - Unauthorized site entry
    - Protests and Demonstrations
    - Vehicle Collisions
- Equipment Failure
    - Equipment failure affecting emergency response or firefighting capability
    - Loss of electrically powered auxiliaries

2.1.1.2 Major - Site Emergency

2.1.1.2.1 Class Description

Events are in progress or have occurred which involve actual or likely major failures of site functions needed for protection of site personnel or the public. Hazardous material releases contained within the site boundary are not expected to exceed EPA reportable quantities, except in the site or within the area controlled by the facility.

2.1.1.2.2 Personnel Actions

- Assess and Respond
- Immediately inform appropriate site Management, local/state agencies and emergency response organizations of the site emergency and the reasons for the declaration
- Augment resources, as needed
- Provide release and exposure estimates to offsite authorities for actual hazardous conditions
- Provide projections based on available conditions and information for foreseeable contingencies
- Escalate to GENERAL EMERGENCY, reduce emergency class or close out and brief appropriate personnel, as appropriate

2.1.1.2.3 Initiating Conditions for a Major Site Emergency

- Fire
    - On-site fire lasting more than ten (10) but less than thirty (30) minutes
    - Requiring outside assistance
    - Affecting unit operations
- Hazardous Materials Release
    - Hazardous materials release exceeding EPA reportable quantities
    - Hazardous material explosion

- Loss of Environmental Control
    - Flammable gas or liquid release greater than reportable quantity with potential for ignition
    - Potential/Actual release of hazardous odors
    - Pollution control equipment failure
- Natural Phenomenon
    - Flooding of site access or egress, or
    - Actual major storm damage (tornado, hurricane, high winds, etc.)
- Unusual Operations and Other Hazards
    - Medical emergency involving multiple injuries/fatalities
    - Security alert (bomb search, civil disturbance, hostage, or unauthorized personnel on-site etc.)
    - Explosion affecting unit operation

2.1.1.3 Major - General Emergency

2.1.1.3.1 Class Description

Events are in progress or have occurred which involve actual or imminent substantial safety, health, and environmental concerns. Hazardous materials releases can be reasonably expected to exceed EPA reportable quantities offsite.

2.1.1.3.2 Personnel Actions

- Assess and Respond
- Immediately inform site Management and local/state agencies of the General Emergency and the reason for the declaration
- Provide protective action recommendations to local/state authorities
- Augment resources, as needed
- Provide release and exposure estimates to offsite authorities for actual hazardous conditions
- Provide projections based on available conditions and information for foreseeable contingencies
- Close out/de-escalate emergency class by briefing appropriate site personnel and local/state personnel

2.1.1.3.3 Initiating Conditions for Major General Emergency

- Fire
    - Fire lasting more than thirty (30) minutes
    - Requiring off-site response
- Hazardous Materials
    - Hazardous material releases exceeding EPA reportable quantities and leaving the site

- Loss of Environmental Control
    - Flammable gas or liquid release greater than reportable quantities for thirty (30) minutes
    - Ignition of that release
    - Failure of water containment/uncontrolled release of impounded water
- Natural Phenomenon
    - High wind condition, heavy rain with major flooding of site facilities causing damage to major site systems, earthquakes
- Unusual Operations and Other Hazards
    - No events in this classification

2.1.2 Emergency Communications/Notifications

This section describes the methods used for notification of site emergency response personnel, and local, State, and Federal Emergency Response Centers.

Any emergency or incident observed should be immediately communicated to the employee's direct supervisor, and once it is safe to do so, all supervisors will report up to the Safety Director or Director. The Safety Director or Director is then responsible for communicating additional emergency protocols to employees, classifying an event in the appropriate emergency class, and then notifying any additional outside personnel as needed.

The Renewal Corporation will establish a project wide communication system that will provide effective information and contact capability for the staff throughout the project site as well as for emergency responders.

Any visitors to the site and operational areas are assigned to a Renewal Corporation representative. This individual is responsible for informing the visitors of emergencies when they occur, and for taking protective action as necessary. All visitors to site will also participate in a project orientation with an overview of the emergency procedures.

Site personnel are trained on actions to be taken in an emergency prior to their work assignments. Otherwise, an individual who has been trained in emergency response procedures must escort them. The training includes instructions on the methods of notification and the required actions in the event of an emergency.

The Safety Director or Director is responsible for contacting Kiewit Corporate and Regional personnel and RES Corporate and Regional personnel for all types of emergencies, including major events. Specific details on notification of Company Corporate and Regional personnel are covered in the appropriate notification procedures. Corporate Kiewit Office Number (402) 342-2052, RES Corporate Office Number (713) 520-5400.

The Safety Director or Director are also responsible for proper notifications of Siskiyou or Klamath counties if needed. Kiewit and RES have spokespersons for all notifications to the public.

Some Emergency Contact Information is included below with a full list included in Appendix B. Contact information will be updated and identified prior to mobilization.

Table 2-1. Contacts in the Event of Emergency

CONTACT	CONTACT INFORMATION
Kiewit On Site Safety Director	TBD
Kiewit Project Director	TBD
RES On Site Safety Manager	TBD
RES On Site Project Manager	TBD
KRRC Representative	TBD
PacifiCorp Representative	TBD
Plant Operations	TBD
Klamath County Sheriff's Office	541-883-5130
Siskiyou County Sheriff Office	530-841-2900
Cal Fire	530-842-3516
Copco Lake Fire Department	530-459-0434
Keno Fire Department	541-883-3062
Hornbrook Fire Station	530-475-3582
California Highway Patrol	530-841-6000
Sky Lakes Medical Center	541-882-6311
Fairchild Medical Clinic	541-842-4121

2.2 Emergency Procedures

Specific emergency response procedures to various emergency situations are detailed below.

2.2.1 Site Evacuation and Muster Points

In the event of a stop work situation where a work site or project site evacuation occurs specific muster points have been identified for each dam shown in Appendix C. It is the responsibility for each crew foreman or supervisor to take head counts of all employees at muster points and report to the Safety Director or Project Director. In the event of a site-wide evacuation, offsite locations will be identified for crews to meet, and the crew foreman or supervisor will take account for all employees and report any missing employees to the Safety Director or Director.

Driving conditions on these identified routes may change with weather conditions and should be monitored. All employees will stay at the designated evacuation spot until an "all clear" is called and it is safe to return to the jobsite.

2.2.2 Adverse Weather/Natural Disaster

Weather conditions for the day shall be discussed as part of morning toolbox meetings with each crew and will be monitored closely throughout the shift as conditions change. Work will be amended based on the changing weather conditions and necessary precautions will be taken. The Director or Safety Director will oversee determining when to activate storm procedures. General storm precautions are outlined below.

2.2.2.1 Pre-Storm Preparation

When the Weather Forecast indicates the possibility of severe weather affecting the area, the Director or Safety Director will activate the Winter Weather/Severe Storm Preparation Procedure. The Procedure includes performing the following steps:

- Ensure that the construction office is outfitted with a portable, battery operated weather band radio and extra batteries.
- Develop, maintain, and distribute a list of emergency telephone numbers and email addresses for employees and authorities.
- Organize a Damage Survey and Repair Team. This team will be the first on the site to assess damage after the storm and make the site safe enough for the return of the entire workforce.
- Prepare a system to inform employees of when to return to work. (A company call-in number, website with a bulletin or discussion board, etc.)
- Identify and avoid long-term material storage in areas prone to flooding.
- Identify vulnerable work in-progress and determine how to best protect it from damage; boarding up windows, sandbags, capping pipes, buried incomplete underground, etc.
- Develop a list, procure and store supplies necessary for preparing the site for a storm.
- Keep the Proposed Action area free from an accumulation of debris and scrap material that can become windblown hazards. This will reduce the amount of time necessary to complete preparations on the jobsite in the event of an anticipated storm.
- Ensure that fuel supplies, de-watering pumps and generators are adequate for repairs after the storm.
- Be prepared to anchor or restrain everything that could blow away with netting for dumpsters, banding and banding tools for lumber, form work, scaffold planks, portable toilets, etc. Look to see what might fly away, then restrain it.
- Be alert to job conditions that require advance attention or special materials to reduce emergency preparation time.
- Ensure that all loose scrap material is gathered up and disposed of in the dumpsters.
- Ensure that the dumpsters are emptied. If the dumpster service is unable to pull the dumpsters, they shall be securely covered with nets to prevent the debris in them from becoming windblown hazards.

- Ensure that all loose forming materials are neatly stacked and banded.
- Ensure that all materials, tools, sheds, gang boxes, and small equipment that can be damaged by rising water are removed from excavations and low areas prone to flooding.
- Ensure that continuous berms are installed at excavations. Remove any non-essential barricades. Anchor essential barricades.
- Ensure that all equipment is relocated out of excavations. Lower crane booms.
- Raise the hook, trolley in, and allow tower cranes to weathervane.
- Top off the fuel tanks of all equipment and ensure fill caps are properly secured.
- Ensure dewatering, standby, and diesel-powered equipment are ready to operate. Operate equipment as conditions warrant.
- Identify vulnerable material and work-in-progress and determine how to best protect it from the effects of flooding.
- Ensure that all electronic equipment in storage is protected from rising water. Ensure backup electrical generator power is available, as required.

2.2.2.2 Post Storm Recovery

Following implementation of the Winter Weather/Severe Storm Preparation Procedure. The following steps will be conducted:

- A damage survey team will inspect the job site, identify and document the damage, prioritize repairs, complete a Job Hazard Analysis and Safe Plans of Action, and then initiate repairs with a skeleton remobilization crew of skilled tradespersons.
- Do not touch loose or dangling wires. Report such damages to the electrical Contractor, the utility company, or police officers.
- Complete preparations for the return of the full workforce. Implement the system to inform employees to return to work.

2.2.2.3 Specific Natural Disaster Incident Responses

The appropriate responses to specific natural disasters are detailed below:

2.2.2.3.1 Severe Thunderstorms

Thunderstorms may occur anytime of the year. High winds and lightning are very possible during these events. The following steps will be conducted if severe thunderstorms are identified:

- Project personnel will monitor the storm progress toward the location of the site.
- Personnel will be informed to abandon man-lifts, scaffolding, form work, cranes, and other elevated work surfaces when lightning is detected within 8 miles. For workers on the ground, the alert will be broadcast when lightning is detected within 3 miles. The Construction Manager will inform superintendents when they may return to work.
- Daily clean-up and proper bundling and stabilization of stored material will be maintained to minimize the possibility of debris and materials becoming airborne.

2.2.2.3.2 Tornados

Though tornados are rare, they may occur with little to no warning. The following steps will be conducted if a tornado is identified in the surrounding vicinity:

- Ensure personnel take refuge in a designated sheltering structure on-site to avoid window and door openings.
- Advise personnel against seeking shelter in vehicles, conexes, or trailers.
- Operations of mobile cranes and other elevated platforms will be suspended. Booms will be laid down if time permits, or the load line hooked to the structure at some low point. The equipment will be left and refuge taken in a shelter.
- If the site is hit by a tornado, the Damage Survey and Repair Team members will survey the site for damage before authorization to return to work is given. The Director or Safety Director will determine how and who will initiate repairs before the general workforce returns to their stations.

2.2.2.3.3 Earthquake Preparation

The magnitude of the earthquake, combined with the epicenter location and the ground conditions, determine how severe the affects will be at the Proposed Action area. In preparation for such an event the following steps will be taken.

- Ensure shelves will be securely fastened to walls.
- Ensure heavy objects will be placed on lower shelves and not stored above individual's heads in workspaces.
- Ensure breakable items will be stored in low, closed cabinets.
- Identify safe places in each room (under sturdy furniture, against inside walls, away from glass) during New Employee Orientation.
- Identify safe places outdoors (away from buildings, trees, electrical lines, and bridges) during New Employee Orientation.
- Ensure disaster supplies will be maintained on site (flashlight and extra batteries, battery operated radio, first aid kit with manual, and drinking water).

During an earthquake (indoors)

- Ensure personnel take cover beneath a sturdy piece of furniture or against an indoor wall away from glass that might break.
- Ensure personnel stay inside.

During an earthquake (outdoors)

- Facilitate gathering all employees in the immediate area and direct personnel to higher ground.
- Ensure personnel do not gather underneath any overhead power or other structures.

During an earthquake (in a moving vehicle)

- Ensure personnel find a clear area away from buildings, trees, overpasses, and overhead wires.
- Once the shaking has stopped, personnel will proceed with caution. Roads may have been damaged during the shaking.

After the earthquake

- Personnel will be prepared for aftershocks. They may cause additional damage for hours to months after the main shock.
- Help injured or trapped persons within the limits of your abilities.
- Listen to a battery-operated radio or television for emergency information. Stay out of damaged buildings!
- Use the telephone only for emergency calls.
- Clean up spilled materials.
- Open cabinet and closet doors cautiously.
- Check utilities for damage. If you smell gas, turn off the gas and do not use electrical devices (including telephones). Stay away from broken electrical wires and turn off the main fuse box or circuit breaker. If water pipes are damaged, do not use the toilet and avoid tap water for drinking.
- Inspect all cranes and equipment before use to ensure they are safe to operate.
- All materials/equipment that is suspended/installed using temporary methods (rigging, etc.) must be inspected to ensure attachments are secure.
- All temporary structures must be inspected to ensure their integrity. If the event caused damage to any temporary embankments, secant pile wall, or the dam itself, all employees shall gather at the identified dam muster point.

2.2.3 Dam or Tunnel Failure

An emergency alarm will be sounded if any worker sees a breach or a failure of the dam facility, radio/phone communication will alert all workers located in the immediate work area or downstream from the breach, and all will be evacuated to the dam site's muster point where head counts will be taken. The Safety Director or Director will make the necessary agency notifications in the event of a dam breach/failure.

Tunneling Work will be conducted at each of the four facilities. All confined space procedures outlined in the Health and Safety Plan will be followed during this work. In the event of a tunnel failure, emergency services will immediately be called, and all work will be stopped. The Safety Director or Director will direct emergency services, so they are able to promptly arrive at the tunnel location.

2.2.4 Downstream Flooding/Water Emergencies

A notification to the National Weather Service River Forecast Center will need to be made of any major hydraulic change that could potentially affect the timing and magnitude of flooding below Iron Gate.

In the event of an emergency occurring to employees conducting marine work, a water rescue procedure will be implemented. Workers will immediately deploy lifting rings and a skiff/push boat will assist in the rescue. In the case of a potential drowning emergency, 911 will be called and the boat will transport the injured personnel to the nearest ramp and wait for emergency services to arrive. If the employee is conscious and fit for duty the Safety Director will be called for an evaluation.

2.2.5 Medical Emergency

In the event of an employee injury, the first responder will evaluate if the danger still exists and move the affected person out of harm's way if possible. First aid will be administered, and offsite first responders called if necessary. If necessary, the employee will be transferred offsite for medical care. A map of hospital locations is included in Appendix D. A supervisor should immediately be called and will investigate what occurred. Other medical emergencies to be trained on include heat exhaustion, allergic reactions, and diabetic reactions. Specific individual procedures are detailed in the project's Health and Safety Plan.

2.2.6 Fire Management

All onsite equipment, vehicles, and work trailers will have a fire extinguisher. Regular inspections are conducted of the equipment. Hot work permits are filled out and followed before any activities that could cause fire or sparks. This process is described in detail in the Health and Safety Management Plan. Any larger fire or one that lasts longer than 10 minutes is classified as a major emergency and workers shall evacuate the area and contact the necessary fire management personnel to address the emergency. Specific fire management procedures are detailed in the Fire Management Plan.

2.2.7 Traffic/Equipment Incident

Any traffic incident that involves an injury should immediately contact 911 so proper medical care can be given. A supervisor should also be immediately notified, and an incident report filled out and police may be called in an applicable situation. A California and Oregon Traffic Management Plan has been prepared to minimize impacts to bicycle and pedestrian traffic.

2.2.8 Hazardous Material Spill

An Oregon Spill Prevention, Control, and Countermeasure Plan (SPCC) and a California Hazardous Materials Management Plan has been developed for the project to outline formal prevention procedures and documentation/notification for any spills on the jobsite within each state. Only employees qualified, certified, or trained in dealing with hazardous material will be allowed to clean up a hazardous material spill.

If possible, the source of the spill should be located and controlled with necessary alarms raised. A supervisor should be contacted, and the Safety Director or Director will make the necessary agency notifications.

2.2.9 Blasting and Explosives

When blasting or explosives are to be used in demolitions during the Proposed Action, only employees directly involved in the blasting operations will be allowed in the work area. The work area will be blocked off and proper notifications are to be made to give employees notice of the blasting activities. No employees shall be directly downstream from the dam when explosives are to be used in the case of an uncontrolled release. If an adverse reaction to blasting occurs (i.e., faulty dynamite, delayed blasting, etc.) all work in the area will be stopped and local emergency services will be called, and the safety director will be called. Blasting professionals will be called to handle materials if needed.

2.2.10 Security Threats

If a security threat is determined on the work site or in the community nearby, an alert, ideally with text, radio, or email, will notify workers in the area with directions to stop work and shelter in place or to evacuate the jobsite. If directly confronted with a threat, all employees should remain calm and signal for help if they are unable to escape the situation. In an active shooter situation, the RUN, HIDE, FIGHT procedure shall be followed. If a terrorist or bomb threat occurs, all employees shall meet at the site muster points and a headcount conducted. Law enforcement will be called to address the threat.

2.3 Termination, Follow-Up, and Revisions

The objectives following any emergency declaration will be to alleviate the consequences of the event and to take those steps described in the Emergency Response Plan to minimize any effects on the health and safety of the workers and public. Once the emergency has ended, the goal will be to restore to normal operating status. For some situations, such as an UNUSUAL EVENT involving a natural phenomenon that has no effect on the site operation, the emergency may not require any change from normal operations. Therefore, no formal transition will be required. In other circumstances that may involve suspected or actual damage to the facilities, a transition will be appropriate.

The Safety Director or Director will determine when the Recovery phase begins or is necessary. The following guidelines, as applicable to the specific situation, will be observed prior to ending the emergency:

- The affected equipment is in a stable condition and can be maintained in that condition indefinitely.
- Releases of hazardous materials to the environment have ceased.
- Fire or similar emergency conditions no longer constitute a hazard to equipment or personnel.

Proper documentation and reporting of any incident will be conducted by the Safety Director or Director and relayed to all employees. Reconstructive efforts will begin if necessary and discussions on how to prevent the incident in the future will happen with employees. This Plan

will be updated and revised if new emergency procedures are implemented, and those updates will be circulated to all employees during additional safety trainings.

2.4 Training

During orientation all employees will be trained on the emergency procedures contained in this Plan. Additional smaller trainings will be conducted as part of a drill or a toolbox meeting. A copy of this Plan as well as the Health and Safety Plan will be kept in every accident investigation kit and in the project offices.

Appendix A

Emergency Procedure Checklist & Medical Plan

Project Name:	
Job Number:	
Job Address:	
Job Phone:	Job Fax:

EMERGENCY MEDICAL PLAN

Prior to work on the project, communications must be established with emergency service providers. This includes: Medical Providers, Medical Transportation, Fire & Rescue. These contacts should be by the project superintendent. Arrangements should be made to have emergency providers tour the project to pre-plan for emergency conditions.

Contact should be made with a representative of the medical facility that will be directly involved in emergency and stabilization care. The representative must be aware of and provide for Drug Testing and Modified Work Programs.

FIRST AID

FIRST AID & AED TRAINED PERSONS: _____
FIRST AID KIT LOCATED:
AED LOCATED: _____

PRIMARY PHYSICIAN

DOCTOR: _____
LOCATION: _____
PHONE: _____

IN THE EVENT OF A SERIOUS ACCIDENT OR INJURY

HOSPITAL: _____
LOCATION: _____
CONTACT PERSON: _____
PHONE: _____
DIRECTIONS: _____

EMERGENCY MEDICAL TRANSPORTATION PROVIDER:

NAME: _____
LOCATION/PHONE: _____

EMERGENCY FIRE & RESCUE PROVIDER:

NAME: _____
LOCATION/PHONE: _____

EMERGENCY ACCESS TO THE PROJECT:

DIRECTIONS: _____

THIS PLAN MUST BE POSTED IN THE PROJECT OFFICE

THINK SAFETY

Rev: 01/12

Chapter 12: Emergency Medical Plan

EMERGENCY RESPONSE CHECKLIST

STEP ONE – SENIOR PERSON ON-SITE

___ Contact emergency services.
___ Notify the crisis management team leader.
___ Contact the safety manager.
___ Initiate site control and determine if the site should be shut down.
___ Make certain that all employees are accounted for.
___ Do not move anything that could be classified as evidence.
___ Ensure telephone coverage at the site.
___ Inform site personnel to direct requests for info. from outside groups to you.
___ Post workers to restrict entry to the site.
___ Establish a command center.
___ Select a temporary spokesperson with the assistance of the team leader

___ Notify the owner/developer of the project.
___ Advise team leader of findings from investigation if Safety Manager has not already done so.

STEP TWO - TEAM LEADER

FROM INITIAL & ON GOING DISCUSSIONS WITH SENIOR PERSON ON-SITE

___ Determine what happened, when/where it happened, and who is involved.
___ Verify the current status of the site (shut down?).
___ Determine whether you and/or spokesperson are needed on site.
___ Notify management and operations manager.
___ Advise the corporate team administrator and receptionist how to route calls.
___ Identify potential spin-off crises.
___ Notify **ACIG (Insurance broker/company)**
___ Designate someone to stay with the injured worker(s) at the hospital until family members arrive.
___ Notify outside counsel (give him/her Safety Manager's phone number to contact)
___ If necessary, initiate a post accident drug/alcohol test (check with legal counsel).
___ Initiate a third party investigation team to work in tandem w/ authorities at the direction of legal counsel.
___ Union/craft contact – Determine if union business agent should be notified.

STEP THREE - SAFETY MANAGER

___ Gather number/names of injured and/or fatalities and obtain phone number(s) of the spouse(s)/family(ies). Contact the team leader to determine who should notify the spouse(s)/family(ies).

Rev: 01/06

Chapter 13: Abbreviated Crisis Management Program

EMERGENCY RESPONSE CHECKLIST

___ Debrief workers who witnessed the accident.
___ If appropriate, notify the applicable governmental agency (i.e. OSHA).
___ Document the incident in writing and on film.
___ Work with third party investigator that is designated by legal counsel.
___ Advise team leader of findings from investigation if Senior Person On-site has not already done so.

STEP FOUR - TEAM LEADER

___ If there is an employee injury/fatality, determine who will notify spouse(s)/family(ies). A fatality may require a personal visit.
___ If the injury/fatality is a subcontractor's employee, it is the subcontractors responsibility to notify the spouse/family.
___ If a non-employee is hurt/killed, allow the authorities to make the notification and contact your insurance broker/company.
___ Inform any surrounding areas that may be affected by the incident.
___ Instruct personnel at the accident site to contact their families to let them know they are OK.

STEP FIVE - SPOKESPERSON

___ Write, and get clearance for, all statements and releases.
___ Designate someone to screen your calls from the news media.
___ Complete the media log sheets.
___ Anticipate media questions. If possible, role-play a media interview with a colleague before going live.
___ Assemble necessary background information and literature.
___ If you elect to give the media a tour, make certain that the area is safe and a company representative escorts them. Issue safety equipment and require a hold-harmless agreement be signed, if necessary.
___ Instruct reporters on your safety procedures before going on-site. If they violate any of the procedures, you have the right to ask them to leave.
___ Advise reporters of a time and place for future updates.
___ Follow-up on additional media inquiries.

STEP SIX - TEAM LEADER/SPOKESPERSON/LEGAL DEPARTMENT

___ Identify the audiences that need to be contacted for update purposes.
___ Gather details on past negative issues which the media may refer to.
___ Fax/e-mail/voicemail all employees and job sites to notify them of the incident and tell them to whom they should direct media/general information calls. Provide on-going updates.
___ Establish an emergency message mailbox for personnel to access if office operations have been impacted.
___ Track all media coverage via a monitoring service and the Internet.
___ Secure and offer critical-incident stress counseling for personnel who witnessed the accident (if deemed necessary).

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Chapter 13: Abbreviated Crisis Management Program

Appendix B

Project Emergency Contacts

Contacts in the Event of Emergency

Kiewit Safety Manager:

Kiewit Director:

KRRC Representative:

PacifiCorp Representative:

RES Representative:

Plant Operations:

National Weather Service –

OR Forecast Office: 541-773-1067

National Weather Service –

CA Forecast Office: 707-443-4162

Klamath County Sheriff's Office:

541-883-5130

Siskiyou County Sheriff Office:

530-841-2900

Cal Fire: 530-842-3516

Copco Lake Fire Department:

530-459-0434

Keno Fire Department: 541-883-3062

Hornbrook Fire Station: 530-475-3582

Oregon Department of Forestry:

503-945-7200

Oregon Emergency Response System:

800-452-0311

California Highway Patrol: 530-841-6000

Emergency Response: 911

Ashland Community Hospital:

541-201-4000

Sky Lakes Medical Center: 541-882-6311

Basin Immediate Care: 541-883-2337

Fairchild Medical Center: 541-842-4121

Kiewit Corporate Office: 402-342-2052

RES Corporate Office: 713-520-5400

Local Utility Companies

PacifiCorp: 888-221-7070

Copco Lake Mutual Water Co: 530-459-5159

Yreka Water Department: 530-841-2386

Government Agencies/Offices

OSHA: Occupational Safety & Health Administration

1-800-321-OSHA (6742)

EPA: Environmental Protective Agency

1-800-424-8802

HazMat: Hazardous Materials

1-800-HMR-4922

California Office of Emergency Management, Dam Safety:

916-845-8911

California Department Water Resources, Dam Safety: 916-574-2619

Oregon Water Resources Department, Dam Safety: 503-580-3970

California Spill Hotline: 717-878-5017

Oregon Department of Forestry:

503-945-7200

Appendix C

Site Evacuation and Muster Points

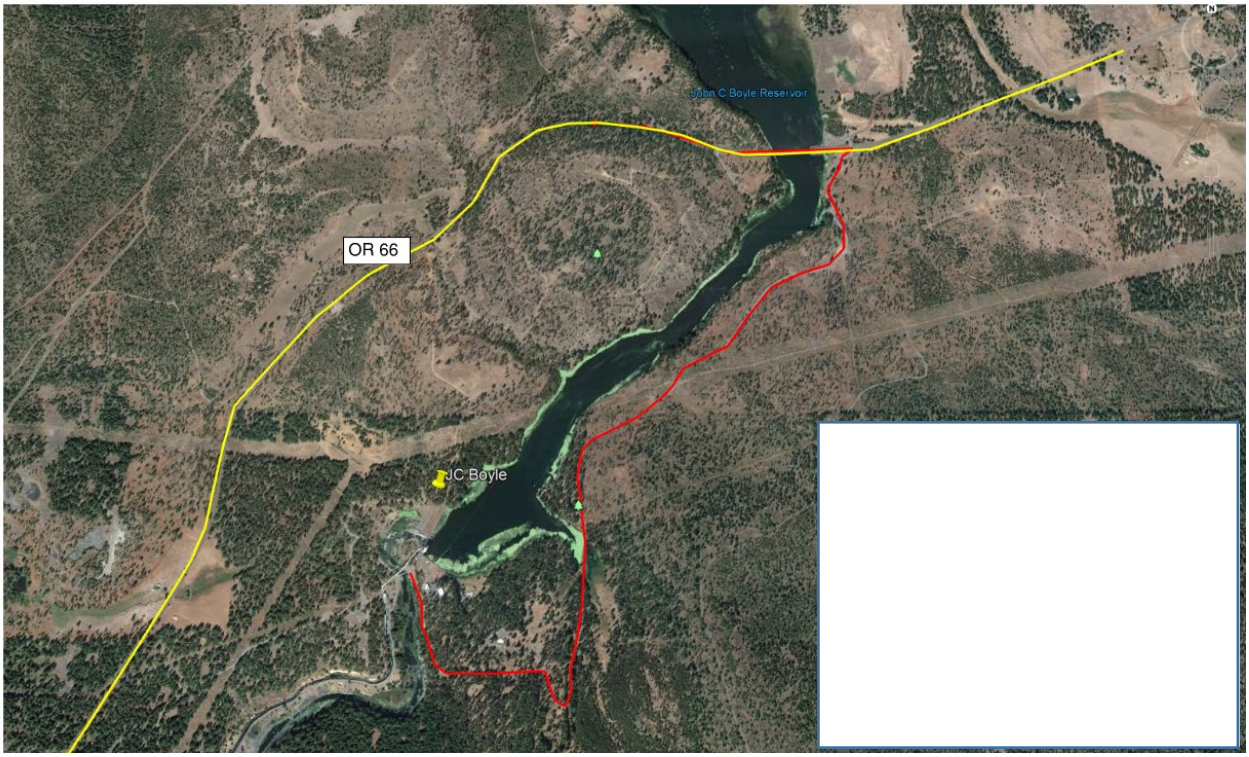

Figure C-1. J.C. Boyle Site Evacuation

Take JC Boyle Site Access Road and Green Springs Highway (OR 66) (10 minutes, 1 mile)

1. Head southwest on the JC Boyle Site Access Road (0.8 Miles)
2. Turn right onto JC Boyle Access Road (.2 miles)
3. Merge to the left for Green Springs Highway (OR 66)

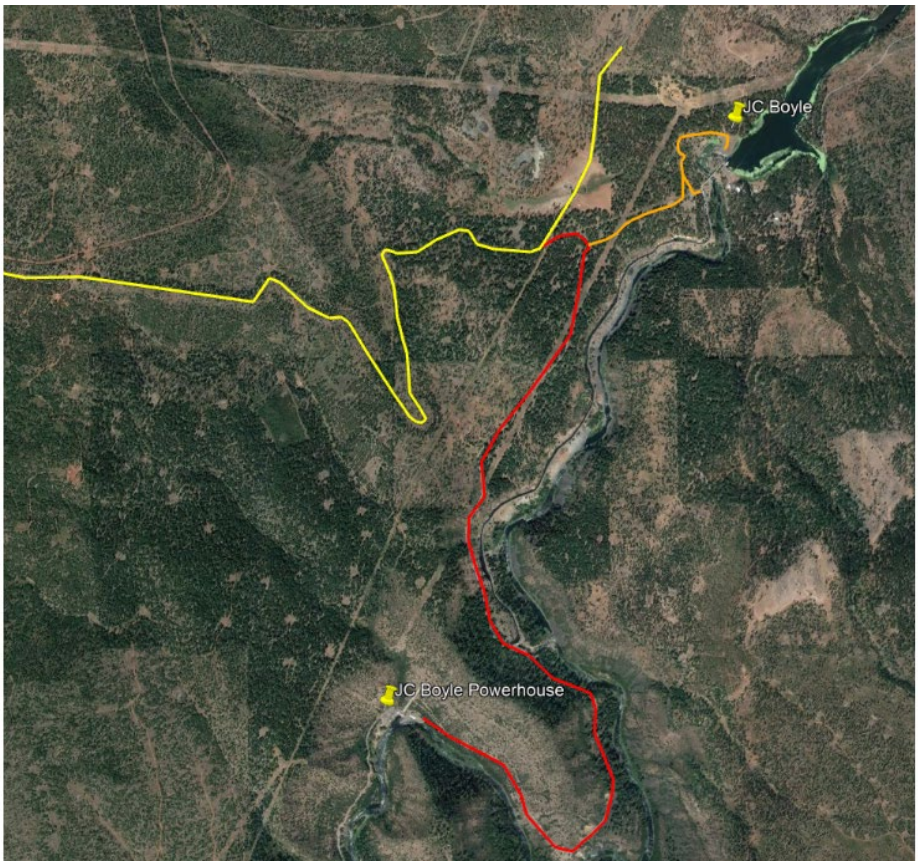

Figure C-2. J.C. Boyle Powerhouse Evacuation

Take JC Boyle Powerhouse Access Road and Green Springs Highway (OR 66) (28 minutes, 3.5 miles)

1. Head North on the JC Boyle Powerhouse Access Road (3.3 Miles)
2. Keep left onto JC Boyle Access Road (.2 miles)
3. Merge to the left for Green Springs Highway (OR 66)

Figure C-3. Copco Dam Site Evacuation

Take Copco Road and Ager Beswick Road to Ager Road/Hornbrook Ager Road (34 minutes, 17 miles)

1. Head southwest on Copco Road toward Iron Gate Lake Road (3.6 miles)
2. Turn left onto Daggett Road (0.3 miles)
3. Turn left to stay on Daggett Road (446 feet)
4. Turn right to stay on Daggett Road (0.7 miles)
5. Turn right (1.8 miles)
6. Turn right onto Ager Beswick Road (10.5 miles)

Follow Ager Road and Montague Grenada Road to 99-97 cutoff (20 minutes, 17.3 miles)

7. Turn left onto Ager Road/Hornbrook Ager Road (10.1 miles)
   Continue to follow Ager Road.
8. Continue onto N. 11th Street/Montague Ager Roger Road (0.8 miles)
   Continue to follow N. 11th Street.
9. Continue straight onto S. 11th Street/Montague Grenada Road (5.7 miles)
   Continue to follow Montague Grenada Road.
10. Turn right onto 99-97 Cutoff. Destination will be on the left.

Figure C-4. Copco Dam Site Evacuation

Follow Copco Dam to Hornbrook. (50 minutes, 21.3 miles)

1. Head southwest on Copco Road toward Iron Gate Lake Road (10.2 miles)
2. Sharp right onto Linda Drive (0.1 miles)
3. Slight left onto Mountain (0.9 miles)
4. Turn right onto Copco Road/Iron Gate Lake Road (9.1 miles)
   Continue to follow Copco Road
5. Turn right onto Hornbrook Road/Oregon Slough (0.8 miles)
6. Turn right onto Henley Hornbrook Road (0.2 mile)
7. Turn left onto Front Street (69 feet)

Figure C-5. Iron Gate Site Evacuation

Take Copco Road to Ager Road (12 minutes, 6.1 miles).

1. Head southeast toward Lakeview Road (0.3 miles)
2. Continue straight onto Lakeview Road (0.8 miles)
3. Turn left onto Copco Road/Iron Gate Road (5.0 miles)
   Continue to follow Copco Road.
4. Turn left onto Ager Road (0.1 miles)

Follow Klamathon Road to CA-96 E (21 minutes, 5.2 miles)

5. Turn right onto Klamathon Road (2.3 miles)
6. Turn right onto Anderson Grade Road/Klamathon Road (2.7 miles)
7. Continue onto Anderson Grade Road (0.2 miles)

Drive to I-5 N. (3 minutes, 2.4 miles)

8. Turn right onto CA-96 E (signs for Portland/Interstate 5 N) (0.6 miles)
9. Merge onto I-5 N. (1.8 miles)

Figure C-6. JC Boyle Site Muster Points

Blue Dot = Muster Point

Figure C-7. JC Boyle Power House Muster Points

Blue Dot = Muster Point

Figure C-8. Copco No. 1 and Copco No. 2 Muster Points

Blue Dot = Muster Point(s)

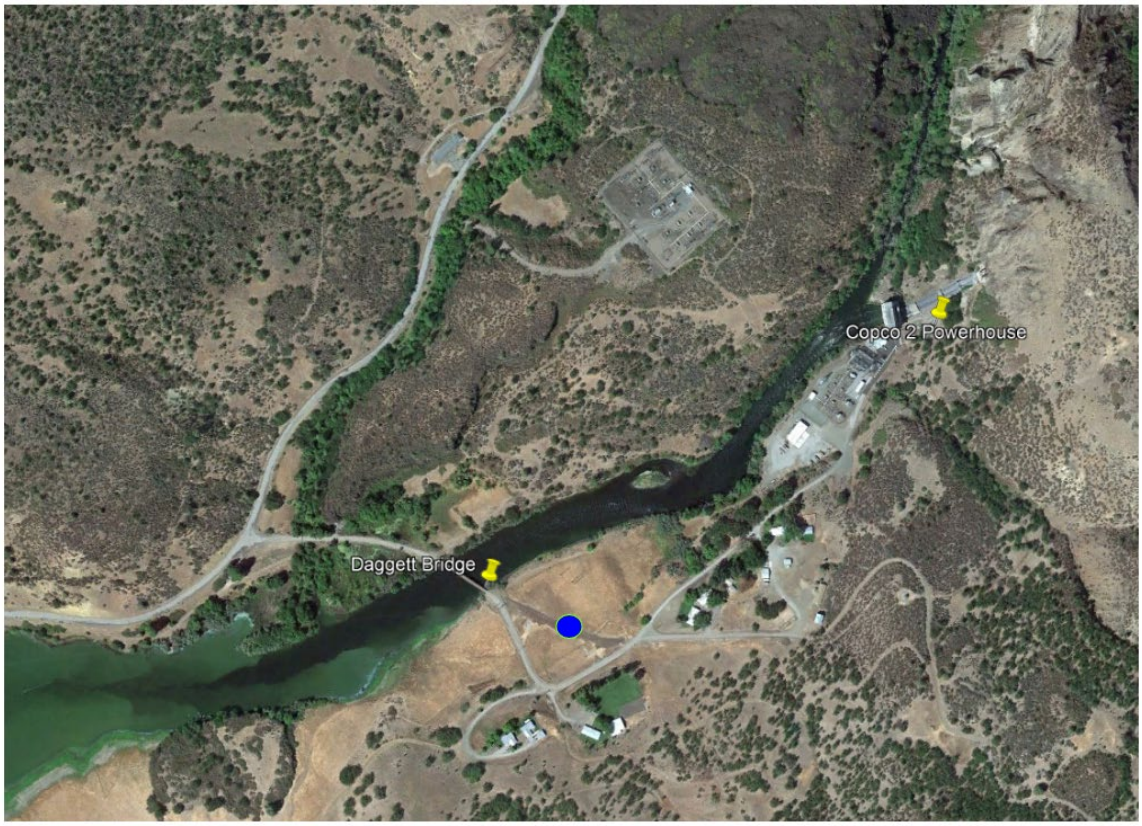

Figure C-9. Copco No. 2 Muster Points

Blue Dot = Muster Point

Figure C-10. Iron Gate Muster Points

Blue Dot = Muster Point

Appendix D

Map of Hospital Locations

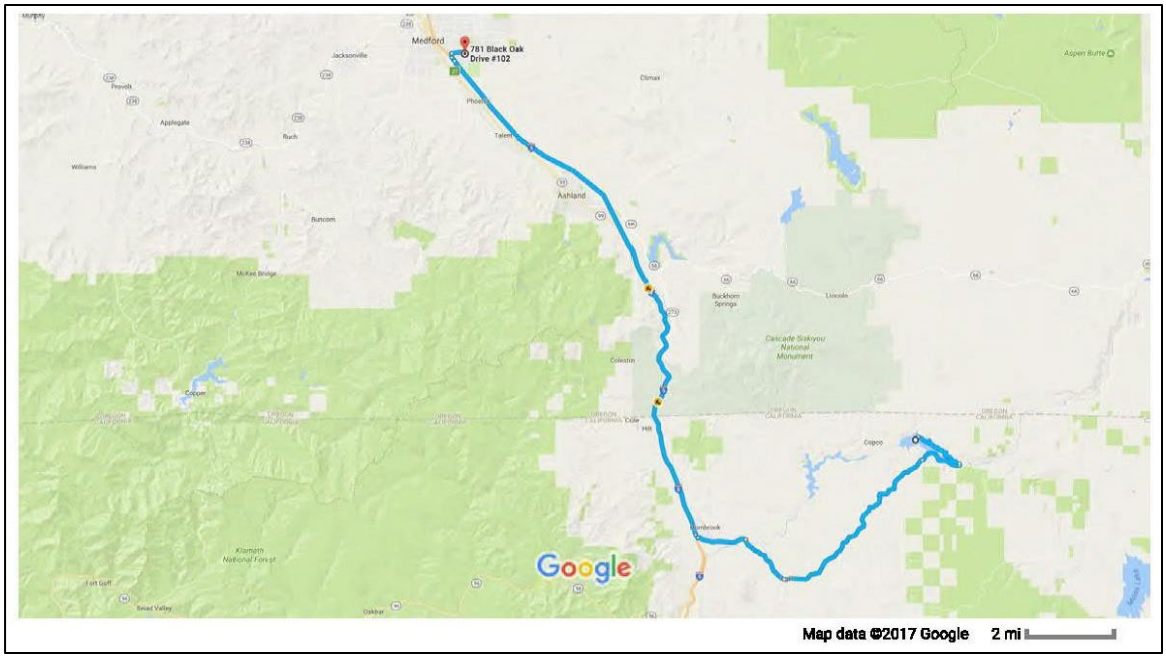

Figure D-1. Route to Asante Work Health

Get on I-5 N in Hornbrook from Ager Beswick Road (48 minutes, 25.7 miles)

1. Head southeast on Copco Road toward Teal Road (3.5 miles)
2. Turn right to stay on Copco Road (0.1 miles)
3. Turn right on Ager Beswick Road (2.8 miles)
4. Turn left to stay on Ager Beswick Road (12.6 miles)
5. Turn right onto Ager Road/Hornbrook Ager Road (3.5 miles)
   Continue to follow Ager Road
6. Turn left onto Ager Road/Copco Road/Juniper Road (2.0 miles)
   Continue to follow Copco Road
7. Turn right to merge onto I-5 N (0.2 miles)

Follow I-5 N to Highland Drive in Medford. Take exit 27 from I-5 N. (34 minutes, 34.7 miles)

8. Merge onto I-5 N. (34.5 miles)
   Entering Oregon.
9. Take exit 27 toward OR-99 S/Medford (0.3 miles)

Take E Barnett Road to Black Oak Drive (3 minutes, 1.1 miles)

10. Turn right onto Highland Drive (signs for Barnett Road) (0.3 miles)
11. Turn right at the first cross street onto E. Barnett Road (0.7 miles)
12. Turn right onto Black Oak Drive (0.1 miles)

781 Black Oak Drive #102
Medford, OR 97504

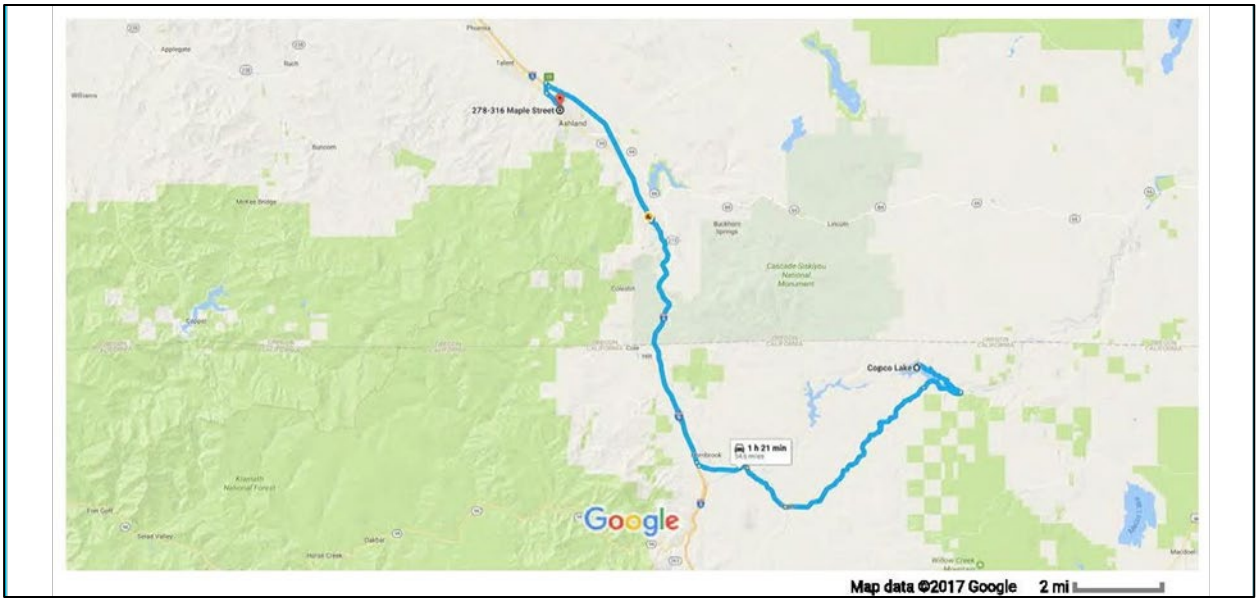

Figure D-2. Route to Asante Ashland County Hospital

Get on I-5 N in Hornbrook from Ager Beswick Road (48 minutes, 25.7 miles)

1. Head southeast on Copco Road toward Teal Road (3.5 miles)
2. Turn right to stay on Copco Road (0.1 miles)
3. Turn right on Ager Beswick Road (2.8 miles)
4. Turn left to stay on Ager Beswick Road (12.6 miles)
5. Turn right on Ager Road/Hornbrook Ager Road (3.5 miles)
   Continue to follow Ager Road.
6. Turn left onto Ager Road/Copco Road/Juniper Road (3.0 miles)
   Continue to follow Copco Road
7. Turn right to merge onto I-5 N (0.3 miles)

Follow I-5 N to Maple Street in Ashland (31 minutes, 28.7 miles)

8. Merge onto I-5 N (26.5 miles)
   Entering Oregon
9. Take exit 19 for Valley View Road toward Ashland (0.2 miles)
10. Turn left on S Valley View Road toward Ashland (0.6 miles)
11. Turn left onto OR-22 S (1.4 miles)
12. Turn right onto Maple Street. Destination will be on the left. (0.2 miles)

278-316 Maple Street
Ashland, OR 97520

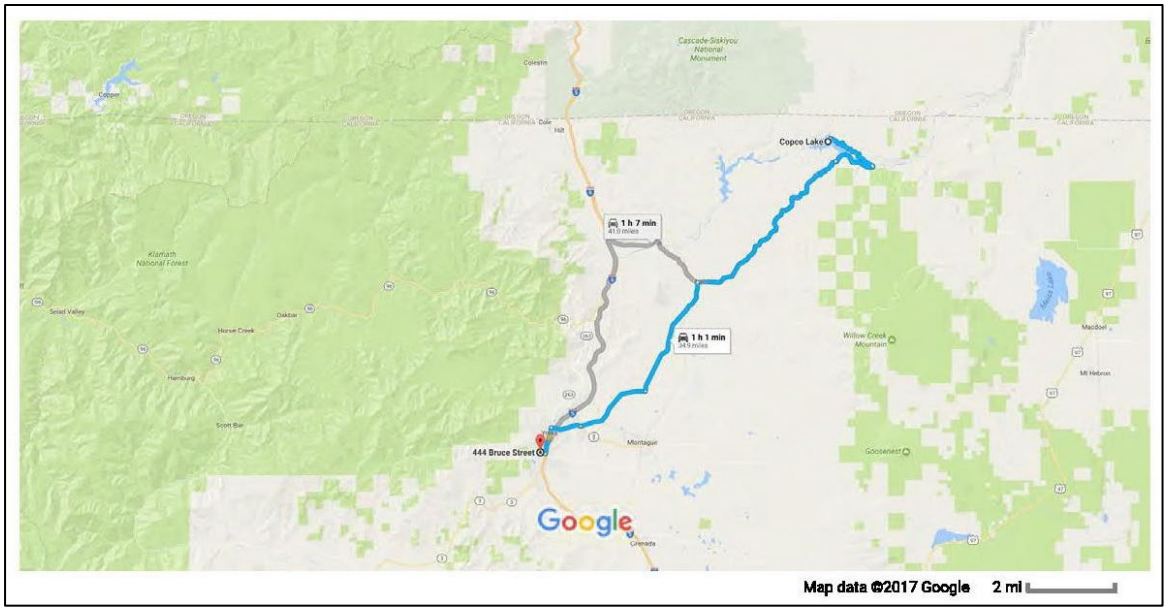

Figure D-3. Route to Fairchild Medical Center

Take Ager Beswick Road to Ager/Hornbrook Road (39 minutes, 19.0 miles)

1. Head southeast on Copco Road toward Teal Road (3.5 miles)
2. Turn right to stay on Copco Road (0.1 miles)
3. Turn right onto Ager Beswick Road (2.8 miles)
4. Turn left to stay on Ager Road (12.6 miles)

Continue on Ager Road. Take Yreka Ager Road to Bruce Street in Yreka (21 minutes, 15.7 miles)

5. Turn left onto Ager Road/Hornbrook Road (7.5 miles)
   Continue to follow Ager Road
6. Turn right on Yreka Ager Road (4.7 miles)
7. Turn right into Montague Road (1.8 miles)
8. Turn left onto N Main Street (1.6 miles)
9. Turn right onto Bruce Street Destination will be on the right (0.3 miles)

444 Bruce Street
Yreka, CA 96097

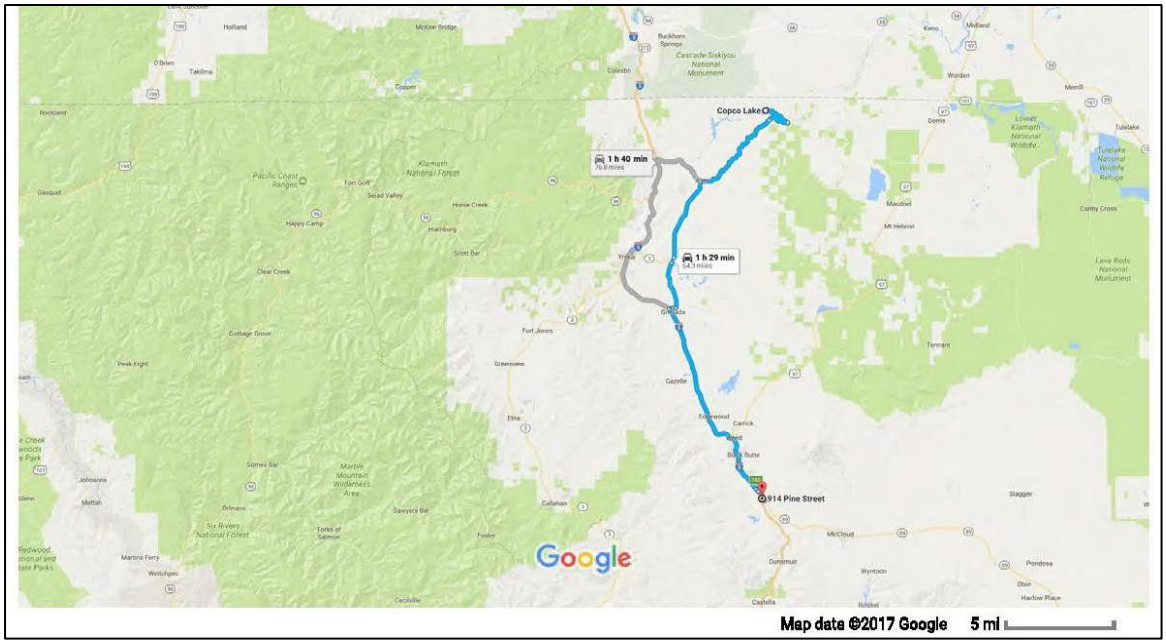

Figure D-4. Route to Mercy Medical Center

Take Ager Beswick Road to Ager/Hornbrook Road (39 minutes, 19.0 miles)

1. Head southeast on Copco Road toward Teal Road (3.5 miles)
2. Turn right to stay on Copco Road (0.1 miles)
3. Turn right onto Ager Beswick Road (2.8 miles)
4. Turn left to stay on Ager Road (12.6 miles)

Continue on Ager Road, Montague Grenada Road and I-5 S to E Alma Street in Mount Shasta (48 minutes, 44.8 miles)

5. Turn left onto Ager Road/Hornbrook Ager Road (10.1 miles)
   Continue to follow Ager Road.
6. Continue onto N 11th Street/Montague Ager Road (0.8 miles)
   Continue to follow N 11th Street.
7. Continue straight onto S 11th Street/Montague Grenada Road (5.7 miles)
   Continue to follow Montague Grenada Road.
8. Turn right into 99-97 Cutoff (0.9 miles)
9. Turn left to merge onto I-5 S (25.5 miles)
10. Take exit 740 toward I-5/Mount Shasta Boulevard (1.4 miles)
11. Continue on Mount Shasta Boulevard (1.4 miles)

Drive to Pine Street (2 minutes, 0.5 miles)

12. Turn right onto E Alma Street (0.1 miles)
13. Turn right onto Pine Street. Destination will be on the right. (0.4 miles)

914 Pine Street
Mt. Shasta, CA, 96067

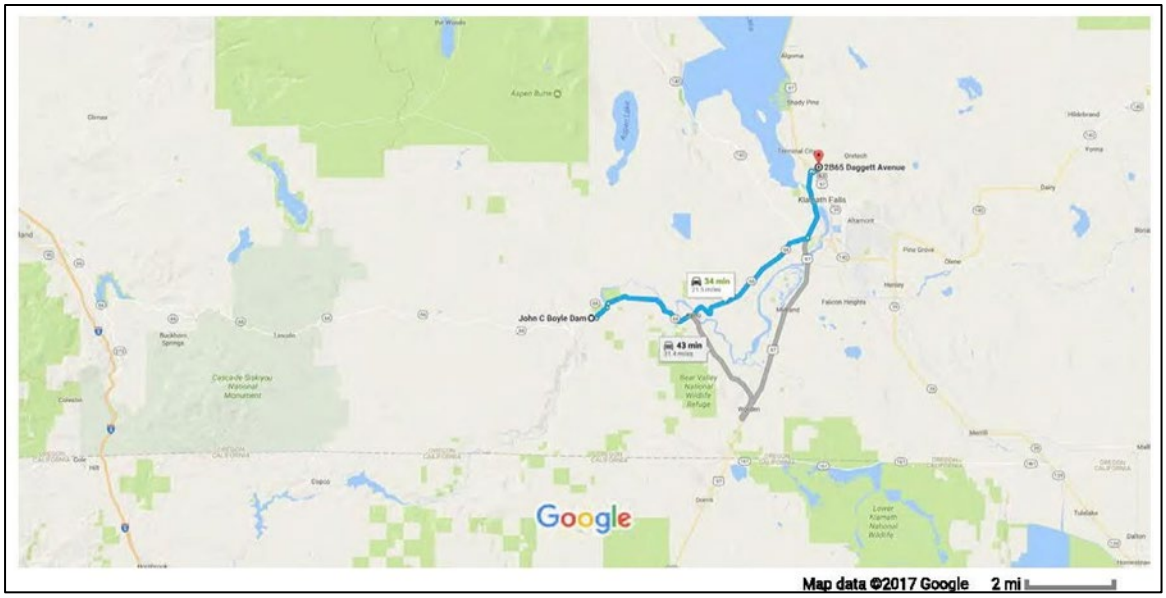

Figure D-5. Route to Sky Lakes Medical Center

Take Topsy Grade Road to OR-66 E. (4 minutes, 1.2 miles)

1. Head north on Topsy Grade Road (0.9 miles)
2. Continue straight (0.5 miles)

Follow OR-66 E and US-97 N to Campus Drive in Klamath Falls (26 minutes, 19.7 miles)

3. Turn right onto OR-66 E (15.0 miles)
4. Turn right to merge onto US-97 N (4.4 miles)
5. Take the State 39 S/US-97 S exit toward Winema N.F. Headquarters/Oregon Institute of Technology (0.1 miles)
6. Merge onto to US-97 BUS S/State 39 S (0.1 miles)

Continue on Campus Drive. Drive to Daggett Avenue (3 minutes, 0.5 miles)

7. Turn left onto Campus Drive (0.3 miles)
8. Turn right toward Daggett Avenue (371 feet)
9. Turn left onto Daggett Avenue (0.2 miles)

2865 Daggett Avenue
Klamath Falls, OR 97601

Appendix D

Use and Occupancy Plan for Bureau of Land Management Lands

KLAMATH RIVER RENEWAL CORPORATION

Lower Klamath Project
FERC Project No. 14803

Use and Occupancy Plan for Bureau of Land Management Lands

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

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Table of Contents

List of Tables

Appendices

1.0 Introduction

This Use and Occupancy Plan for Bureau of Land Management (BLM) Lands is a sub-plan of the Construction Management Plan that will be implemented as part of the Proposed Action for the Lower Klamath Project. This Use and Occupancy Plan for BLM Lands is separated by state (i.e., Oregon and California) to assist the BLM in its management of distinct jurisdictions.

1.1 Purpose of Management Plan

The purpose of the Use and Occupancy Plan for BLM Lands is to define coordination requirements, responsibilities, and procedures to be followed on federal lands administered by BLM, during implementation of the Proposed Action. This Plan also characterizes expectations for construction activities along BLM land and roads. The Use and Occupancy Plan for BLM Lands is designed to incorporate BLM guidelines that the Klamath River Renewal Corporation (Renewal Corporation) will meet prior to, during, and after construction.

This Use and Occupancy Plan for BLM Lands pertains to work the Renewal Corporation (including its contractors) will conduct in support of the Proposed Action. The Renewal Corporation will work alongside BLM staff members to ensure reasonable BLM requirements and requests described in this Use and Occupancy Plan for BLM Lands are met and followed. The Use and Occupancy Plan for BLM Lands, therefore, outlines BLM's procedures the Renewal Corporation will follow throughout the duration of the Project.

1.2 Relationship to Other Management Plans

The Use and Occupancy Plan for BLM Lands is supported by elements of the following management plans for effective implementation: Oregon Erosion and Sediment Control Plan, Remaining Facilities Plan, Reservoir Area Management Plan, Waste Disposal and Hazardous Materials Management Plan, Recreation Facilities Plan, and Construction Management Plan (sub-plans). To avoid duplicating information, elements from these other management plans are not repeated herein but are, where appropriate, referred to in this Use and Occupancy Plan for BLM Lands.

1.3 Effective Date for License Surrender

Per Ordering Paragraph (R) in the License Surrender Order, the Federal Energy Regulatory Commission (Commission) will determine that License Surrender is effective when the Commission determines that the Renewal Corporation has satisfied all conditions in the order. After License Surrender is effective, the BLM will administer these lands unencumbered by the authorizations derived from the license. The actions identified in the Use and Occupancy Plan for BLM Lands assure that the conditions of these lands will be acceptable to BLM.

2.0 Oregon BLM - Specific Land Management Interests

This section identifies actions within the Proposed Action that the Renewal Corporation will implement on federal lands under the jurisdiction of BLM's Klamath Falls Field Office. Table 2-1 summarizes the individual actions. This table will be utilized to document status of project completion during implementation of the Proposed Action. Further details regarding these project-related actions are presented in Section 2.1.

Table 2-1: Project-Related Actions to be Completed on Oregon BLM Land

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[1]
Rehabilitation and Revegetation				
OR-BLM-01	J.C. Boyle Power Canal	Establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring. Wildlife ramps will be vegetated; depending on the steepness of the grade, the sides of the ramps will either have rock or vegetation.	Post-Drawdown	
OR-BLM-02	Scour Hole Disposal site	Coordination with the BLM will occur prior to any tree removal. In the scour hole area (to the west), protection of critical root zone will be attempted with temporary fencing. Final stabilization of scour hole fill slope will be achieved using coarse native rock. Final stabilization of top of scour hole will be achieved using coarse native rock and a single hydroseed application. Site may require fencing if hazardous void spaces are present.	Pre-Drawdown Post-Drawdown	

[1] Status column to be completed in periodic reports to BLM following action completion.

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[1]
OR-BLM-03	J.C. Boyle Powerhouse Access Road alignment at Scour Hole	Rehabilitate roadside swale using native seed mix, place boulders near road's edge, and achieve final stabilization adjacent to swale (see OR-BLM-11).	Post-Drawdown	
OR-BLM-04	J.C. Boyle Penstock hillside area	Final stabilization to be achieved using coarse native rock and single hydroseed application. Ensure proper drainage through installation of BMPs per the NPDES 1200-C.	Post-Drawdown	
OR-BLM-05	Penstock Access Road(s) rehabilitation	Upon exit, remove road cut with existing up and downslope road material better aligning with existing topography; stabilize with coarse native rock with proper drainage and installation of water bars/tank trap and single hydroseed application.	Post-Drawdown	
OR-BLM-06	Oregon State Route (SR) 66/J.C. Boyle Dam Road improvements	Restore disturbed areas post-dam removal to keep public access to only the original road footprint; re-plant disturbed areas with vegetation types in adjacent landscape. Final stipulations will be a function of, and incorporated in, Right-of-Way Grant. (See OR-BLM-09).	Post-Drawdown	

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[1]
OR-BLM-07	J.C. Boyle Powerhouse and Tailrace Disposal Site	Establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring. This includes the filled Powerhouse and Tailrace area, substation footprint to the west, maintenance building footprint to the east, and staging area (see OR-BLM-08). Riparian plantings (appropriate species and woody species) to be included in revegetation planting palate.	Post-Drawdown	
OR-BLM-08	Staging Area(s) rehabilitation	Establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring.	Post-Drawdown	
Roads and Right-of-Way				
OR-BLM-09	Oregon SR 66 / J.C. Boyle Powerhouse Access Road SF-299 permit	Retrofit the intersection and access road to the J.C. Boyle Dam complex during the pre-drawdown phase of the Project to facilitate dam removal. Retrofits include construction entrance installation, road widening, culvert relocation, installation of two vehicle pullouts, appropriate barriers,	Pre-Drawdown Post-Drawdown	

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[1]
		and revegetation of a portion of the road.		
OR-BLM-10	J.C. Boyle Power Canal Access Road improvements	Road to be left in place after construction and reduced to the width of a walking trail. Fill material to be contoured and revegetated as described in OR-BLM-01 to align with the trail elevation. Canal road/trail will be blocked from public ATV access after construction is completed.	Pre-Drawdown Drawdown Post-Drawdown	
OR-BLM-11	J.C. Boyle Powerhouse Road widening at Scour Hole	Coordinate material use and placement; coordinate tree removal and disposition; and avoid traffic interruptions during rafting access times. (Note this site is within FERC Project Boundary; see OR-BLM-03.)	Pre-Drawdown	
Recreation Sites				
OR-BLM-12	Topsy Campground improvements	Remove concrete boat launch, concrete step floating dock, and concrete footing for the plastic dock. Floating dock to be re-used and retained onsite for BLM to remove; retain ADA fishing platform as is (do not dismantle.) Achieve final stabilization for above-water (existing reservoir water surface) related land	Pre-Drawdown Drawdown Post-Drawdown	

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[1]
		disturbance in accordance with NPDES 1200-C and restore below-water (existing reservoir water surface) areas following drawdown per the Reservoir Area Management Plan.		
Other Sites				
OR-BLM-13	Distribution Line removal	Remove a distribution line between J.C. Boyle Powerhouse Road and Power Canal Access Road that traverses through BLM land. This line is authorized under ORORO 024416; no changes to this authorization are required, as it includes other uses that will remain. Remove a distribution line beginning approximately 1,000 feet north of the J.C. Boyle forebay that traverses through BLM land just below the penstocks.	Drawdown	
OR-BLM-14	Public signage on J.C. Boyle Dam and Powerhouse Access Roads	Install advance signage to notify vehicles using Oregon SR 66 of construction trucks entering/exiting at the intersection.	Pre-Drawdown Drawdown Post-Drawdown	

2.1 Expectations for Final Condition of BLM Lands[2]

Under Section 24 of the Federal Power Act, the Commission withdrew the BLM Project lands for hydropower exclusive use. Once the dams are removed, the Commission will remove or "vacate" the land withdrawal. For the Commission to complete the land withdrawal vacate, the BLM will acknowledge the lands meet their condition for acceptance. To facilitate the BLM acceptance, the Renewal Corporation will rehabilitate the former dam infrastructure areas. This includes, but is not limited to, rehabilitating disturbed land in a manner that reduces invasive species, promotes the success of native species, protects current beneficial habitat, and minimizes erosion.

The Renewal Corporation will provide final erosion control stabilization for the upland areas as described in Section 2.1.1 using either coarse native rock cover or a native seed mix suitable for upland habitats. Seeding will take place during fall 2024 or spring 2025. The Renewal Corporation may facilitate reestablishment of native plants by adding a topsoil layer and installing temporary irrigation in select areas, following seeding.

The revegetated areas will be monitored twice, annually (2025 and 2026), concurrent with the monitoring program described in the Reservoir Area Management Plan (RAMP) and as established by the 1200-C permit. A minimum of two monitoring years will be completed. For sites required to meet the BLM success criteria as described in Table 2-1, if native cover meets the criteria of 80% native cover or greater and invasive exotic vegetation (IEV) cover is 10% or less following the second monitoring year, the BLM will release the Renewal Corporation from further maintenance and monitoring obligations. In these areas, if success criteria are not met by the end of the initial two years, adaptive management activities will be implemented, and Renewal Corporation will continue monitoring until success criteria are achieved. If a suitable, healthy reference site with little cattle disturbance is identified, this can be used as an analog for the revegetated areas.

Invasive exotic vegetation pretreatment may begin as early as 2023 and continue through the monitoring program. Initiation of IEV treatment will be at the discretion of the Renewal Corporation. Invasive exotic vegetation will be treated using a combination of targeted herbicide application (in coordination with BLM), grubbing, and/or mowing. Invasive exotic vegetation will be removed offsite, as necessary. Any IEV activities performed by the Renewal Corporation will be coordinated ahead of time with the BLM. Coordination will include development and submittal of a Pesticide Use Proposal, and applicable Pesticide Application Records will be submitted to BLM annually. Only BLM-approved herbicides, adjuvants and surfactants will be used on BLM lands.

The following sections describe the actions to be completed at sites on BLM land that are referenced in Table 2-1 and shown in Figure A-1.

[2] The term "final" means the condition of lands on the day when License Surrender is effective.

2.1.1 Rehabilitation and Revegetation

OR-BLM-01 – J.C. Boyle Power Canal

The J.C. Boyle power canal is approximately 2.2 miles long and is located along a bench cut in the slope of the Klamath River canyon. The power canal is a concrete flume approximately 17 feet wide and 12 feet high, with shotcrete applied to the exposed canyon walls. The power canal has overflow structures at the upstream end (consisting of a siphon pipe) and at the downstream forebay (consisting of a gated overflow weir). Details regarding the demolition of the power canal can be found in the Remaining Facilities Plan.

The Renewal Corporation will place the existing reinforced concrete wall sections on the canal invert slab of the power canal and fill the canal with coarse native rock borrowed from the removal of the dam embankment. The Renewal Corporation will establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring. Wildlife ramps will be vegetated; depending on the steepness of the grade, the sides of the ramps will either have rock or vegetation. Erosion and sediment control measures for decommissioning of the power canal will be conducted in accordance with the National Pollutant Discharge Elimination System Stormwater Construction (NPDES) General Permit No. 1200-C (NPDES 1200-C).

See Figures A-2a and A-2b, and refer to Design Drawings C1621, C1310, C1311, C1320, C1321, and 1323 for construction details.

OR-BLM-02 – Scour Hole Disposal Site

The Scour Hole Disposal Site is located between the J.C. Boyle Canal spillway and the Klamath River and located above the anticipated post-drawdown Ordinary-High Water Mark (OHWM). The Renewal Corporation will fill the Scour Hole with concrete rubble and General Fill per the Waste Disposal and Hazardous Materials Management Plan borrowed from adjacent areas. Final stabilization of the scour hole fill slope will be achieved using coarse native rock. Final stabilization of the top of scour hole will be achieved using coarse native rock and a single hydroseed application. Because granularity of the final material at the top of scour hole is currently undetermined, the site may require fencing if hazardous void spaces are present.

Details pertaining to the location, construction, size, disposal materials, and location in relation to the anticipated post-drawdown OHWM are presented in the Oregon Waste Disposal and Hazardous Materials Management Plan. Erosion and sediment control measures for construction of the disposal site and stabilization of the Scour Hole will be conducted in accordance with the Oregon Erosion and Sediment Control Plan.

Coordination with the BLM will occur prior to any tree removal. In the Scour Hole area (to the west), protection of the critical root zone will be attempted with temporary fencing.

See Figure A-3 and refer to Design Drawings C1340, C1341, C1602, and C1623 for construction details.

OR-BLM-03 – J.C. Boyle Powerhouse Access Road Alignment at Scour Hole

The J.C. Boyle Powerhouse Access Road runs between the J.C. Boyle Powerhouse and Dam sites. Much of this road is owned by BLM, while a short length is owned by PacifiCorp. The full length, however, is maintained by PacifiCorp. It is a two-way undivided gravel road 16 to 22 feet wide. The J.C. Boyle Powerhouse Access Road is the primary access route to the powerhouse area and the staging area adjacent to the powerhouse. The J.C. Boyle Powerhouse Access Road will be realigned and widened to allow for construction access and Scour Hole filling. A 300-foot section of the J.C. Boyle Powerhouse Road will be realigned upgradient of the Scour Hole and maintain a 20-foot offset from the edge of the final Scour Hole limit to allow for safe travel. The Renewal Corporation will coordinate material use and placement; tree removal and disposition; and avoid traffic interruptions during rafting access times. The realignment section is within the FERC project boundary. This construction access improvement is planned to be performed in the drawdown year and will remain post construction for future BLM-authorized public use.

The existing Powerhouse Access Road swale will be rehabilitated to adequately convey runoff around the forebay and Scour Hole grading. The unlined swale will be seeded using a native seed mix as part of stabilization. Existing boulders will be placed between the Powerhouse Road realignment and Scour Hole at a maximum of five feet spacing. Adjacent to the swale, the Renewal Corporation will use native rock borrowed from within the work limits. Erosion and sediment control measures for the work to be performed at the Powerhouse Access Road will be conducted in accordance with the NPDES 1200-C.

See Figure A-3 and refer to Design Drawings C1340, C1511, and C1623 for construction details.

OR-BLM-04 – J.C. Boyle Penstock Hillside Area Rehabilitation

The J.C. Boyle Penstocks will be removed and transported off-site for disposal. Prior to ground disturbance, the Renewal Corporation will perform testing to characterize baseline soil contamination and conduct requisite lead abatement to address potential contamination resulting from lead-based paint used on the penstocks. The concrete anchors will be partially removed to the spring line of the penstocks, and then buried using locally available overburden soils side cast from the original construction. Final stabilization will be achieved using coarse native rock and single hydroseed application. Erosion and sediment control measures for decommissioning of the penstocks will be conducted in accordance with the NPDES 1200-C.

See Figure A-4 and refer to Design Drawings C1350, C1351, C1603, and C1624 for construction details.

OR-BLM-05 – Penstock Access Roads Rehabilitation

Four BLM-owned dirt roads extend from the J.C. Boyle Powerhouse Access Road up to various elevations along the penstocks. These roads will be rehabilitated as needed for construction access to the penstock area. The upper penstock road will not be reopened; however, the lower roads will be re-opened for light truck travel only.

Upon exit, the Renewal Corporation will remove the road cut with existing up and downslope road material better aligning with existing topography, and will stabilize with coarse native rock with proper drainage and installation of water bars/tank trap and single hydroseed application. Erosion and sediment control measures for decommissioning and stabilization of the Penstock Access Roads will be conducted in accordance with the NPDES 1200-C.

See Figure A-4 and refer to Design Drawings C1005 and C1512 for construction details.

OR-BLM-06 – Oregon SR 66/JC Boyle Dam Road Improvements (See OR-BLM-09)

The Renewal Corporation will restore disturbed areas post-dam removal to keep public access to only the original road footprint and will re-plant disturbed areas with vegetation types in adjacent landscape.

OR-BLM-07 – J.C. Boyle Powerhouse and Tailrace Rehabilitation

The J.C. Boyle Powerhouse and Tailrace Disposal Site is located on the right bank of the Klamath River and approximately 4.6 river miles downstream of the J.C. Boyle Dam. The Renewal Corporation will fill the tailrace and powerhouse (void space) with concrete rubble and General Fill per the Waste Disposal and Hazardous Materials Management Plan borrowed from adjacent areas. The Renewal Corporation will establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring. This includes the filled Powerhouse and Tailrace area, substation footprint to the west, maintenance building footprint to the east, staging area (OR-BLM-08). Riparian plantings (appropriate species and woody species) to be included in revegetation planting palate.

Details pertaining to the location, construction, size, disposal materials, and location in relation to the anticipated post-drawdown OHWM are presented in the Oregon Waste Disposal and Hazardous Materials Management Plan. Erosion and sediment control measures for construction of the disposal site of the powerhouse and tailrace will be conducted in accordance with the Oregon Erosion and Sediment Control Plan.

Excavated fill materials from the adjacent J.C. Boyle Substation, transformer, and maintenance area will be tested for hazardous materials prior to placement within the tailrace and powerhouse void space.

See Figure A-5 and refer to Design Drawings C1400, C1402, C1410, C1411, and C1603 for construction details.

OR-BLM-08 – Staging Area Rehabilitation

In general, the Renewal Corporation will loosen soil compacted by staging and temporary access road areas adjacent to demolition or other work areas by deep ripping and disking as needed to facilitate seed germination and plant establishment. The Renewal Corporation will preserve and protect native vegetation, where feasible, during active use and revegetation. At the staging area adjacent to the powerhouse and tailrace, the Renewal Corporation will establish vegetation to meet BLM success criteria of 80% native vegetation cover and no more than 10% invasive species cover following a minimum 2 years of monitoring. For all other staging areas, erosion and sediment control measures for decommissioning will be conducted in accordance with the NPDES 1200-C.

See Figure A-6 for the location of staging areas within the J.C. Boyle Development area.

2.1.2 Roads and Right-of-Ways

OR-BLM-09 – Oregon State Route 66/J.C. Boyle Powerhouse Access Road SF-299 Permit

The J.C. Boyle Powerhouse Access Road from Oregon SR 66 to J.C. Boyle Dam is a private gravel road ranging in width between 16 to 18 feet and is owned by BLM and maintained by PacifiCorp and the Oregon Department of Transportation (ODOT). The total Site area is approximately 25,000 to 30,000 square feet. The Renewal Corporation has obtained a Grant of Right-of-Way (i.e., Standard Form 299) to retrofit the intersection and access road to the J.C. Boyle Dam complex during the pre-drawdown phase of the Project to facilitate dam removal. Retrofits include construction entrance installation, road widening, culvert relocation, installation of two vehicle pullouts and a tank trap/trench, and revegetation of a portion of the road.

The access road begins at the intersection of the Oregon State Route 66 (OR-66) and the J.C. Boyle Powerhouse Access Road and ends at the Federal Energy Regulatory Commission (FERC) Project Boundary. This Site will be used by construction vehicles for either ingress or egress for work conducted in the ODOT ROW.

An approximately 2,300 square foot portion of the road to be widened near the ODOT ROW will be revegetated. The Renewal Corporation will finalize a planting plan with the BLM that will be implemented per the BLM's approval. Revegetation will occur over an approximately 18-month period. Erosion and sediment control measures for work to be performed at the SR 66 / J.C. Boyle Powerhouse Access Road intersection will be conducted in accordance with an ODOT Brushing Permit and the NPDES 1200-C.

See Figures A-7a, A-7b and A-8 for construction and rehabilitation details.

OR-BLM-10 – J.C. Boyle Power Canal Access Road Improvements

The J.C. Boyle Power Canal Access Road runs between the J.C. Boyle Dam and forebay spillway, with its western terminus at the intersection of the J.C. Boyle Powerhouse Access

Road, and its eastern terminus at the access road from Oregon SR 66 near the Timber Bridge. Most of this road is owned by BLM, while a short length is owned by PacifiCorp. The full length, however, is maintained by PacifiCorp. It is a 2.1-mile gravel road immediately adjacent to the Power Canal and has a width of approximately 14 feet. The J.C. Boyle Power Canal Access Road is the primary access route to the Power Canal and the two staging areas adjacent to the forebay area. This roadway is to be left in place after construction and reduced to the width of a walking trail. Fill material is to be contoured and revegetated commensurate with OR-BLM-01 to align with the trail elevation. Canal road/trail will be blocked from public ATV access after construction is completed. Erosion and sediment control measures for of the work to be performed at the J.C. Boyle Power Canal Access Road will be conducted in accordance with the NPDES 1200-C.

See Figures A-2a and A-2b and refer to Design Drawing C1501 for construction details.

OR-BLM-11 – J.C. Boyle Powerhouse Road Widening at Scour Hole (See OR-BLM-03)

2.1.3 Recreation Sites

OR-BLM-12 – Topsy Campground Improvements

Topsy Campground is the only BLM recreation site within the Project. Topsy Campground is located on the southeastern shoreline of J.C. Boyle Reservoir and can be accessed via the Topsy Grade Road from Oregon SR 66. The site consists of a campground, small day use area, and a boat launch. All roads within the campground consist of asphalt.

The concrete boat launch, concrete step floating dock, and concrete footing for the plastic dock will be removed in the fall preceding drawdown. All other Topsy recreation features will remain, including the ADA fishing platform. Per BLM direction, the Renewal Corporation will ensure that the floating dock is dismantled and retained onsite for BLM use.

Decommissioning of below-water components of the boat launch, floating dock, and concrete footing will incorporate best management practices required per the Oregon Section 401 Water Quality Certification. This area will be restored per the Reservoir Area Management Plan following drawdown. Decommissioning of upland components of the boat launch and floating dock will incorporate best management practices and erosion and sediment control measures per the NPDES 1200-C.

See Figure A-9 and refer to Design Drawing C7015 for construction details.

2.1.4 Other Sites

OR-BLM-13 – Distribution Line Removal

The Renewal Corporation will remove a distribution line between the J.C. Boyle Powerhouse Road and Power Canal Access Road that traverses through BLM land. The distribution line

shares a Grant of ROW with an existing transmission line (Line 59). This line is authorized under a Grant of ROW (ORORR 024416). The transmission line (Line 59) is not part of the dam decommissioning and will remain. No revegetation is anticipated along this line as access will be from the existing road. Erosion and sediment control measures for distribution line removal will be conducted in accordance with the NPDES 1200-C.

The Renewal Corporation will remove a distribution line beginning approximately 1,000 feet north of the J.C. Boyle forebay that traverses through BLM land just below the penstocks. Poles will be accessed via all-terrain vehicles and no blading or grading will be performed. Poles will be cut approximately 6 inches below surface and removed, and holes will be backfilled and compacted with native soil. Erosion and sediment control measures for distribution line removal will be conducted in accordance with the NPDES 1200-C.

See Figures A-10 and A-11.

OR-BLM-14 – Public Signage on J.C. Boyle Dam and Powerhouse Access Roads

The Renewal Corporation will install advance signage to notify vehicles using Oregon SR 66 of construction trucks entering/exiting at the intersection. The Renewal Corporation's contractor will use temporary traffic control during tree removal and intersection widening.

2.2 Responsible Parties

The Renewal Corporation will be responsible for construction activities, which includes the rehabilitation of BLM lands and site-specific interests (listed herein) post-drawdown. The BLM will be present during construction activities to ensure contractors adhere to construction plans and to ultimately ensure that disturbed sites are restored in a manner that is satisfactory to the agency.

2.3 Monitoring and Reporting

The Renewal Corporation will prepare a monitoring summary report for revegetated areas (OR-BLM-01, OR-BLM-06, and OR-BLM-07) for BLM following each monitoring year. If native vegetation cover and invasive species cover metrics are met on an individual site basis following a minimum of two years of monitoring, BLM will release the Renewal Corporation of monitoring obligations. Additionally, aside from the Scour Hole and Powerhouse and Tailrace Disposal Sites, which will be monitored under the Oregon Erosion and Sediment Control Plan, all disturbed locations will be monitored in accordance with the NPDES 1200-C.

2.4 Project Completion

Upon completion of construction and all rehabilitation work, the Renewal Corporation will meet with the BLM to review the final condition of the BLM lands. This can occur as specific actions are completed. A punch list of items will be developed to identify any remaining actions to establish final stabilization and rehabilitation activities have been conducted in accordance with previously agreed upon terms.

2.5 Construction Management Coordination

The following steps outline the coordination process pre-, during, and post-construction.

2.5.1 General Coordination During Construction

Coordination and regular communication between the Renewal Corporation and the BLM will be necessary to address design and schedule changes, as well as other unanticipated events during construction (e.g., discovery of cultural and/or archaeological resources, hazardous waste spills on BLM land, etc.). A contact list of BLM Klamath Falls Field Office staff will be provided prior to the pre-construction meeting and remain active throughout construction, and until all required post-construction monitoring has been completed. The Renewal Corporation will provide an updated contact list prior to the pre-construction meeting.

2.5.2 Pre-Construction Coordination

Three months prior to construction, the Renewal Corporation will meet with BLM staff to flag boundaries and review the construction schedule, pre-treatment schedule (if applicable), design plans, and any construction monitoring protocols that the BLM requires. At this meeting, the Renewal Corporation will bring current construction drawings and erosion and sediment control drawings. Finally, at the BLM's discretion, additional coordination meetings may be scheduled closer to the actual construction start date as necessary.

2.5.3 Coordination During Construction

It is anticipated that the BLM will be onsite monitoring construction activities throughout the duration of the project to ensure that the Renewal Corporation and its contractors adhere to construction plans and the agency's protocols for performing work on BLM lands. If there are changes to the schedule, design or other delays, the Renewal Corporation will notify the BLM staff member onsite. Similarly, if unanticipated events occur during construction, including deviations from design plans, the Renewal Corporation will stop work to address the issue and determine the best course of action in concert with the on-site BLM staff member. At such time, the BLM will determine whether issues need to be elevated or if corrective measures must be taken. If no staff member is present, the Renewal Corporation and its contractors should refer to the BLM contact list that will be provided.

2.5.4 Post-Construction Coordination

Upon completion of construction on BLM lands, the Renewal Corporation will provide formal notification (e.g., via email) to the BLM that construction work has completed. At such time, the BLM may decide to schedule a walk-through with the Renewal Corporation to ensure that activities at each site have been completed in a manner that is satisfactory to the agency. During the walk-through, the BLM will determine if additional work may be necessary to address any deviations from the construction drawings prior to closeout.

2.5.5 Final Closeout Process

At this final stage in the process, the BLM will schedule a final on-site walk-through with the Renewal Corporation to review the work performed and verify punch list completion for each site. If it is found that BLM conditions have been met, the BLM will release the Renewal Corporation of monitoring obligations. If not, the Renewal Corporation will continue to monitor and report to the BLM until such conditions have been met.

3.0 California BLM – Specific Land Management Interests

This section identifies actions within the Proposed Action that the Renewal Corporation will implement on federal lands administered by the BLM's Redding Field Office. Table 3-1 summarizes the individual actions. This table will be utilized to document status of project completion during implementation of the Proposed Action. Further details regarding these project-related actions are presented in Section 3.1.

Table 3-1: Project-Related Actions to be Completed on California BLM Land

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[3]
CA-BLM-01	Mallard Cove Recreation Site Access Road Improvements / SF 299 permit	Road will be ripped and disced (i.e., the gravel will be blended into the sub-surface). If the sub-surface soil is conducive for vegetation growth, the access road will then be hydroseeded. Erosion and sediment control measures for decommissioning of the access road will be conducted in accordance with the NPDES Construction General Permit (CGP). Obtain access authorization if lands remain outside of the FERC project boundary.	Post-Drawdown	
CA-BLM-02	Ward's Canyon Tree Removal	The Renewal Corporation will remove selected trees located in the Copco No. 2 Bypass Reach river channel in the pre-drawdown year to protect boater safety. A tree removal plan will be finalized based on consultation with the BLM, California Department of Fish and Wildlife and California State Water Resources Control Board.	Pre-Drawdown	
CA-BLM-03	Iron Gate Transmission Line Removal and Rehabilitation	Address the disposition of the BLM lands six months prior to commencing work. Erosion and sediment control measures for distribution line removal will be conducted in accordance with the NPDES CGP.	Post-Drawdown	

[3] Status column to be completed in periodic reports to BLM following action completion.

ID NUMBER	LOCATION	ACTION	TIMING	STATUS[3]
		Coordinate with BLM on the removal of power poles to ensure adequate habitat for nesting birds.		
CA-BLM-04	Iron Gate Restoration Activities	Restore BLM lands within the Iron Gate Reservoir footprint in accordance with the Reservoir Area Management Plan.	Post-Drawdown	

3.1 Expectations for Final Condition of BLM Lands[4]

Under Section 24 of the Federal Power Act, the Commission withdrew the BLM Project lands for hydropower exclusive use. Once the dams are removed, the Commission will remove or "vacate" the land withdrawal. For the Commission to complete the land withdrawal vacate, the BLM will acknowledge the lands meet their condition for acceptance. To facilitate the BLM acceptance, the Renewal Corporation will rehabilitate the former dam infrastructure areas. This includes, but is not limited to, rehabilitating disturbed land in a manner that reduces invasive species, promotes the success of native species, protects current beneficial habitat, and minimizes erosion. The following sections describe the actions to be completed at sites on BLM land that are referenced in Table 3-1 and shown in Figure B-1.

CA-BLM-01 – Mallard Cove Recreation Site Access Road Improvements/SF-299 Permit

Mallard Cove Recreation site is located northeast of the intersection of Patricia Avenue and Ager Beswick Road. This recreation site will be removed under the Proposed Action but is not located on BLM lands. The current access road serves as an ingress/egress to the Mallard Cove Recreation Site and is under the ownership of the BLM. The Renewal Corporation will obtain a Grant of Right-of-Way (i.e., Standard Form 299) to retrofit the access road to facilitate dam and recreation site removal. Retrofits will include the potential removal of three trees, minor grading, and road widening. These modifications may be necessary to accommodate a floating dredge being assembled at Mallard Cove, which will be brought in on a 16-18-foot trailer. A determination on whether to remove trees or widen the road will be made in early 2023.

The access road will be utilized for access to Project-wide restoration activities. Following the completion of Project-wide restoration activities, the access road will no longer be needed and will be hydroseeded for final stabilization. Erosion and sediment control measures for the decommissioning of the access road into Mallard Cove will be conducted in accordance with the National Pollutant Discharge Elimination System Stormwater Construction (NPDES) Construction General Permit (NPDES CGP).

See Figure B-2a and B-2b and refer to Design Drawing C7025 for construction details related to this recreation site.

CA-BLM-02 – Ward's Canyon Tree Removal

Ward's Canyon is the reach of the mainstem Klamath River in which Copco No. 1 and Copco No.2 Dams were constructed. Ward's Canyon extends from a point approximately 1,000 feet upstream of the Copco No. 1 Dam to the Copco No. 2 Powerhouse. The Copco No. 2 Bypass Reach is within Ward's Canyon and extends from Copco No. 2 Dam to the Copco No. 2 Powerhouse. The Renewal Corporation will remove selected trees located in the Copco No. 2 Bypass Reach river channel in the pre-drawdown year to protect public boating safety. A

[4] The term "final" means the condition of lands on the day when License Surrender is effective.

portion of Wards Canyon, bypass reach below Copco No. 1 and Iron Gate Reservoir, is under the ownership of BLM.

The Renewal Corporation has conducted field visits with representatives from UKOA, American Whitewater and tribal representatives to identify hazard trees to be removed from the active channel. Renewal Corporation will use information collected in the field to finalize a tree removal plan that will be provided to the Commission promptly following the License Surrender Order. This plan will include maps showing the distribution, size classes, and species of identified hazard trees. Tree selection, as well as the means and methods for removal, will be based on consultation with the BLM, California Department of Fish and Wildlife (CDFW) and California State Water Resources Control Board (SWRCB).

The Renewal Corporation will use such means and methods (such as leaving root wads in place) to avoid disturbing the banks (including tribal cultural resources) or cause any material sediment discharge in the water column. Finally, the Renewal Corporation will post signs and conduct public outreach, in consultation with the State of California, to inform the public of hazardous conditions for boaters in Ward's Canyon. The Renewal Corporation will report any such tree removal work in the in the Recreation Facilities Plan Annual Report that will be prepared and submitted to the Commission and the SWRCB.

See Figure B-3.

CA-BLM-03 – Iron Gate Transmission Line Removal and Rehabilitation

Select portions of the Iron Gate Transmission line reside on BLM lands. The Renewal Corporation and the BLM will hold a coordination meeting six months prior to commencing work to address the disposition of the BLM lands. This coordination may be requested directly by PacifiCorp. The Renewal Corporation and PacifiCorp will coordinate this outreach with the BLM. Erosion and sediment control measures for distribution line removal will be conducted in accordance with the NPDES CGP. The Renewal Corporation will remove power poles in coordination with BLM to ensure adequate habitat for nesting birds.

See Figures B-4a and B-4b.

CA-BLM-04 – Iron Gate Restoration Activities

The Renewal Corporation will perform restoration activities on BLM land within the current reservoir footprint in accordance with the Reservoir Area Management Plan. This work will occur during the post-drawdown year. The Renewal Corporation will inform the BLM of progress on restoration as part of the overall regulatory and stakeholder outreach.

See Figures B-4a and B.4b.

3.2 Responsible Parties

The Renewal Corporation will be responsible for construction activities, which includes the rehabilitation of BLM lands and site-specific interests (listed herein) post-drawdown. The BLM will be present during construction activities to ensure contractors adhere to construction plans and to ultimately ensure that disturbed sites are restored in a manner that is satisfactory to the agency.

3.3 Monitoring and Reporting

Any revegetation and rehabilitation activities related to Iron Gate transmission line removal and any improvements to the Mallard Cove Access Road will be monitored in accordance with the NPDES CGP, unless the Renewal Corporation determines that additional stabilization work beyond the NPDES CGP is required, based on further consultation with BLM. Any additional monitoring and reporting requested by BLM for rehabilitation and revegetation activities will be provided in a separate report, subject to consultation with the BLM as the federal landowner. Restoration work within the footprint of Iron Gate Reservoir will be performed and monitored according to the RAMP.

3.4 Project Completion

Upon completion of construction and all rehabilitation work, the Renewal Corporation will meet with the BLM to review the final condition of the federal lands administered by BLM. This can occur as specific actions are completed. A punch list of items will be developed to identify any remaining actions to establish final stabilization and rehabilitation activities have been conducted in accordance with previously agreed upon terms.

3.5 Construction Management Coordination

The following steps outline the coordination process pre-, during, and post-construction.

3.5.1 General Coordination During Construction

Coordination and regular communication between the Renewal Corporation and the BLM will be necessary to address design and schedule changes, as well as other unanticipated events during construction (e.g., discovery of cultural and/or archaeological resources, hazardous waste spills on BLM land, etc.). A contact list of BLM Redding Field Office staff will be provided prior to the pre-construction meeting and remain active throughout construction, and until all required post-construction monitoring has been completed. The Renewal Corporation will provide an updated contact list prior to the pre-construction meeting.

3.5.2 Pre-Construction Coordination

Three months prior to construction, the Renewal Corporation will meet with BLM staff to flag boundaries and review the construction schedule, pre-treatment schedule (if applicable), design plans, and any construction monitoring protocols that the BLM requires. At this meeting, the Renewal Corporation will bring current construction drawings and erosion and sediment control

drawings. Finally, at the BLM's discretion, additional coordination meetings may be scheduled closer to the actual construction start date as necessary.

3.5.3 Coordination During Construction

It is anticipated that the BLM will be onsite monitoring construction activities throughout the duration of the project to ensure that the Renewal Corporation and its contractors adhere to construction plans and the agency's protocols for performing work on BLM lands. If there are changes to the schedule, design or other delays, the Renewal Corporation will notify the BLM staff member onsite. Similarly, if unanticipated events occur during construction, including deviations from design plans, the Renewal Corporation will stop work to address the issue and determine the best course of action in concert with the on-site BLM staff member. At such time, the BLM will determine whether issues need to be elevated or if corrective measures must be taken. If no staff member is present, the Renewal Corporation and its contractors should refer to the updated BLM contact list that will be provided.

3.5.4 Post-Construction Coordination

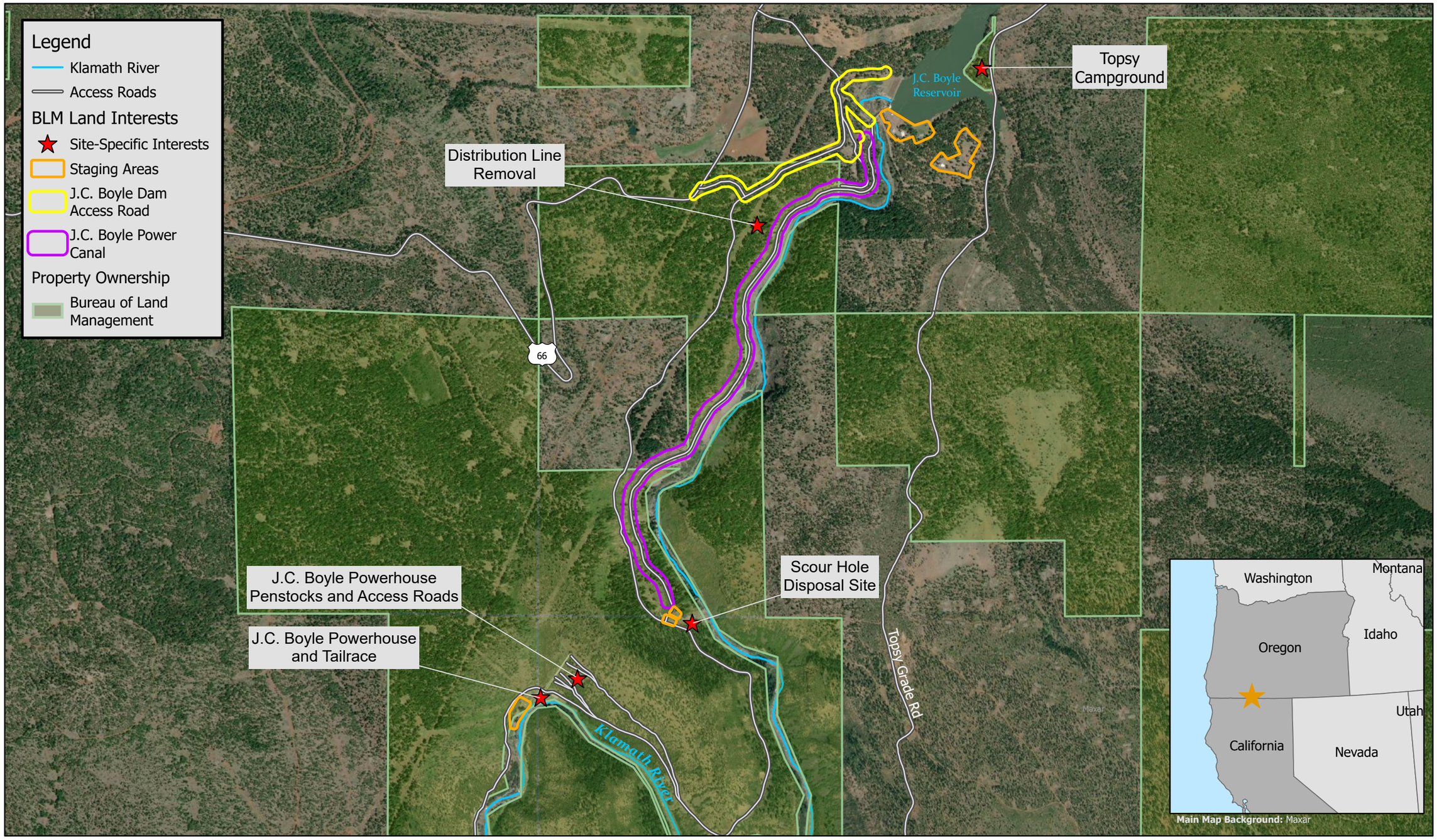
Upon completion of construction on BLM lands, the Renewal Corporation will provide formal notification (e.g., via email) to the BLM that construction work has completed. At such time, the BLM may decide to schedule a walk-through with the Renewal Corporation to ensure that activities at each site have been completed in a manner that is satisfactory to the agency. During the walk-through, the BLM will determine if additional work may be necessary to address any deviations from the construction drawings prior to closeout.

3.5.5 Final Closeout Process

At this final stage in the process, the BLM will schedule a final on-site walk-through with the Renewal Corporation and is contractors to review the work performed and verify punch list completion for each site. The BLM will determine if conditions have been met such that the agency can reasonably assume responsibility for future site management upon License Surrender. If it is found that rehabilitation and revegetation activities have not been performed to satisfy BLM conditions, the BLM will provide formal notification (i.e., via email) to the Renewal Corporation. If the BLM is satisfied with the work performed, the parties will review rehabilitation monitoring plans and finalize reporting schedules.

Appendix A

Figures: Oregon BLM



Lower Klamath Project
BLM Use and Occupancy Plan
Figure A-1: Overview Map of Oregon
BLM Site Specific Interests

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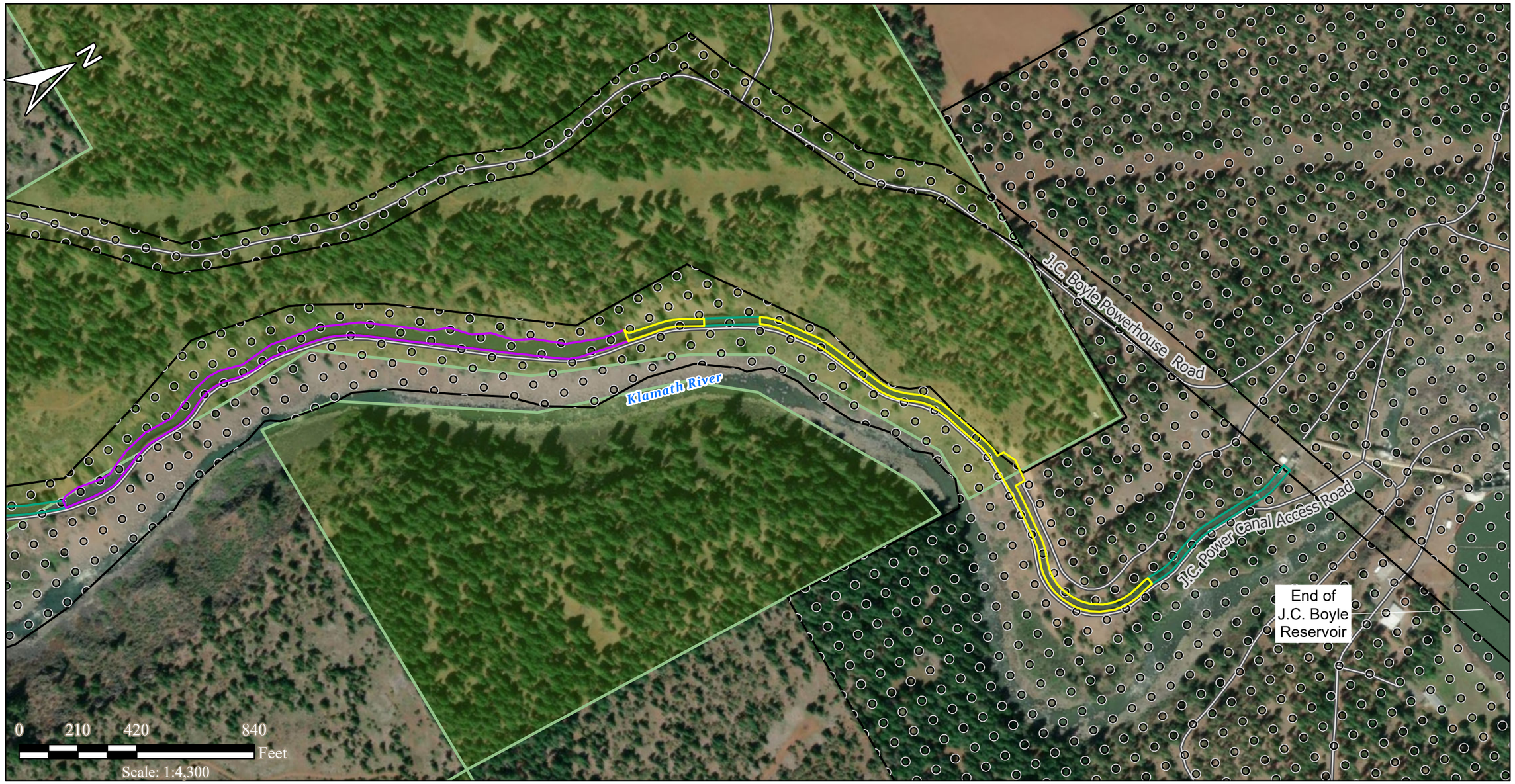

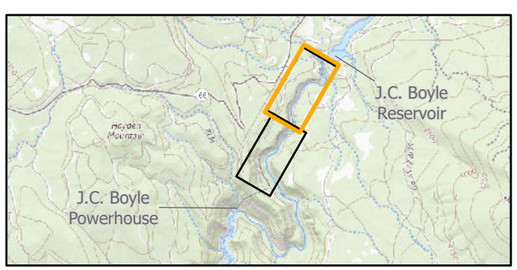

Notes

1.Data Sources: Limits of Work: McMillen Jacobs, Power Canal: McMillen Jacobs, Access Routes: McMillen Jacobs; Land Ownership: Bureau of Land Management

2. Background: Maxar, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

Construction Type

- Demolition: Double-Walled Backfilled Section
- Demolition: Double-Walled Free Standing Section
- Demolition: Single-Walled Canal Section

- FERC Boundary
- Access Routes

Property Ownership

- Bureau of Land Management

Lower Klamath Project

BLM Use and Occupancy Plan

Figure A-2a: J.C. Boyle Power Canal December 2021

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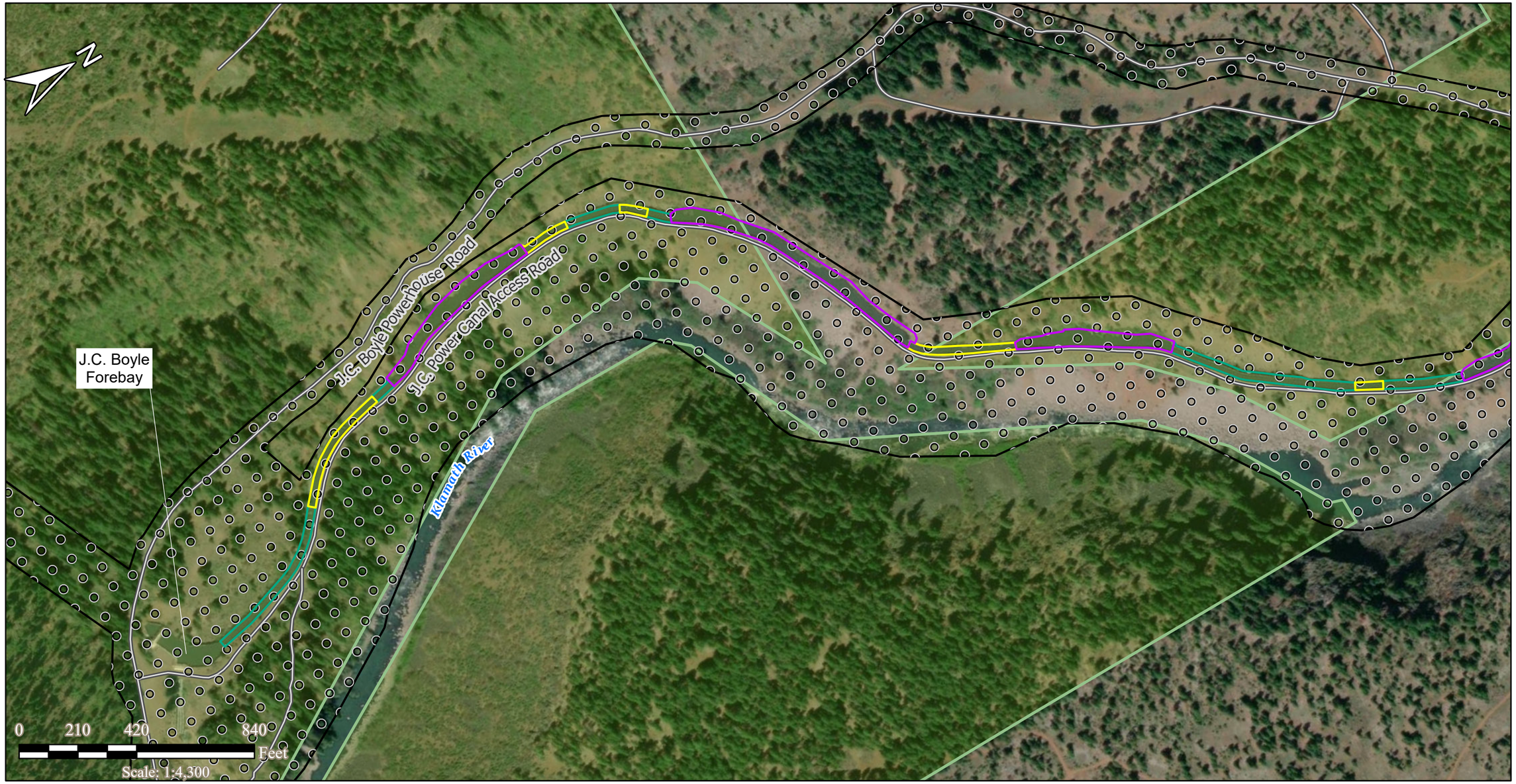

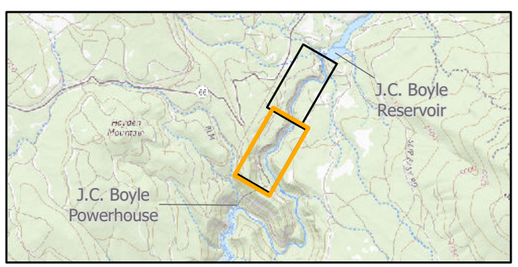

Notes

1.Data Sources: Limits of Work: McMillen Jacobs, Power Canal: McMillen Jacobs, Access Routes: McMillen Jacobs; Land Ownership: Bureau of Land Management

2. Background: Maxar, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

Construction Type

- Demolition: Double-Walled Backfilled Section
- Demolition: Double-Walled Free Standing Section
- Demolition: Single-Walled Canal Section

- FERC Boundary
- Access Routes

Property Ownership

- Bureau of Land Management

Lower Klamath Project

BLM Use and Occupancy Plan

Figure A-2b: J.C. Boyle Power Canal December 2021

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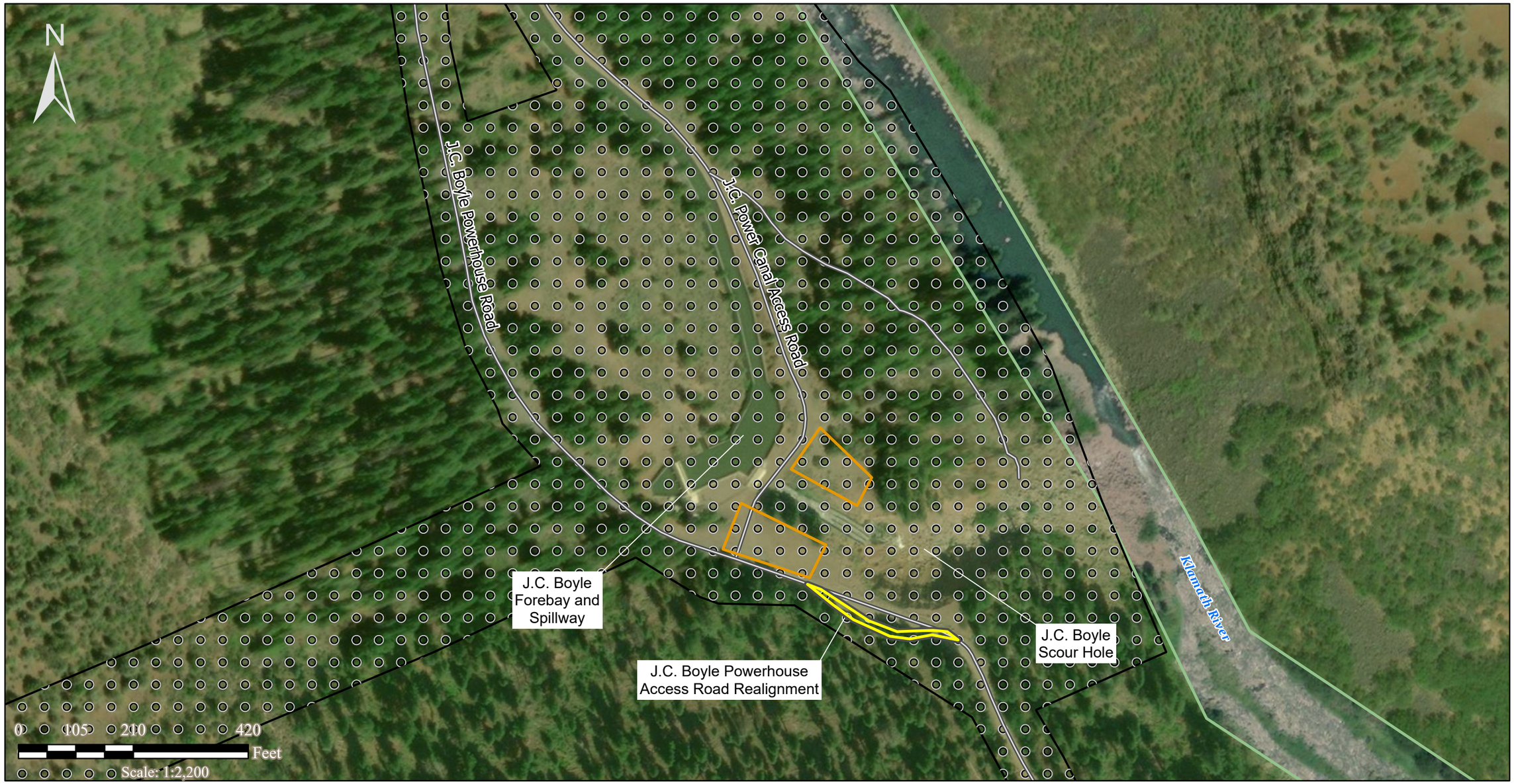

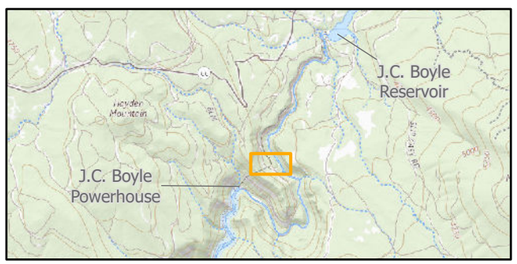

Notes

1. Data Sources: Limits of Work, Staging Sites, Disposal Sites: McMillen Jacobs; Road Alignments: CDM; Land Ownership: Bureau of Land Management

2. Background: Maxar, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

- Road Alignment
- Staging Sites
- Access Roads
- FERC Boundary
- Property Ownership
- Bureau of Land Management

Lower Klamath Project

BLM Use and Occupancy Plan

Figure A-3: Scour Hole Disposal Site and J.C. Boyle Powerhouse Access Road Realignment

December 2021

KLAMATH RIVER RENEWAL CORPORATION

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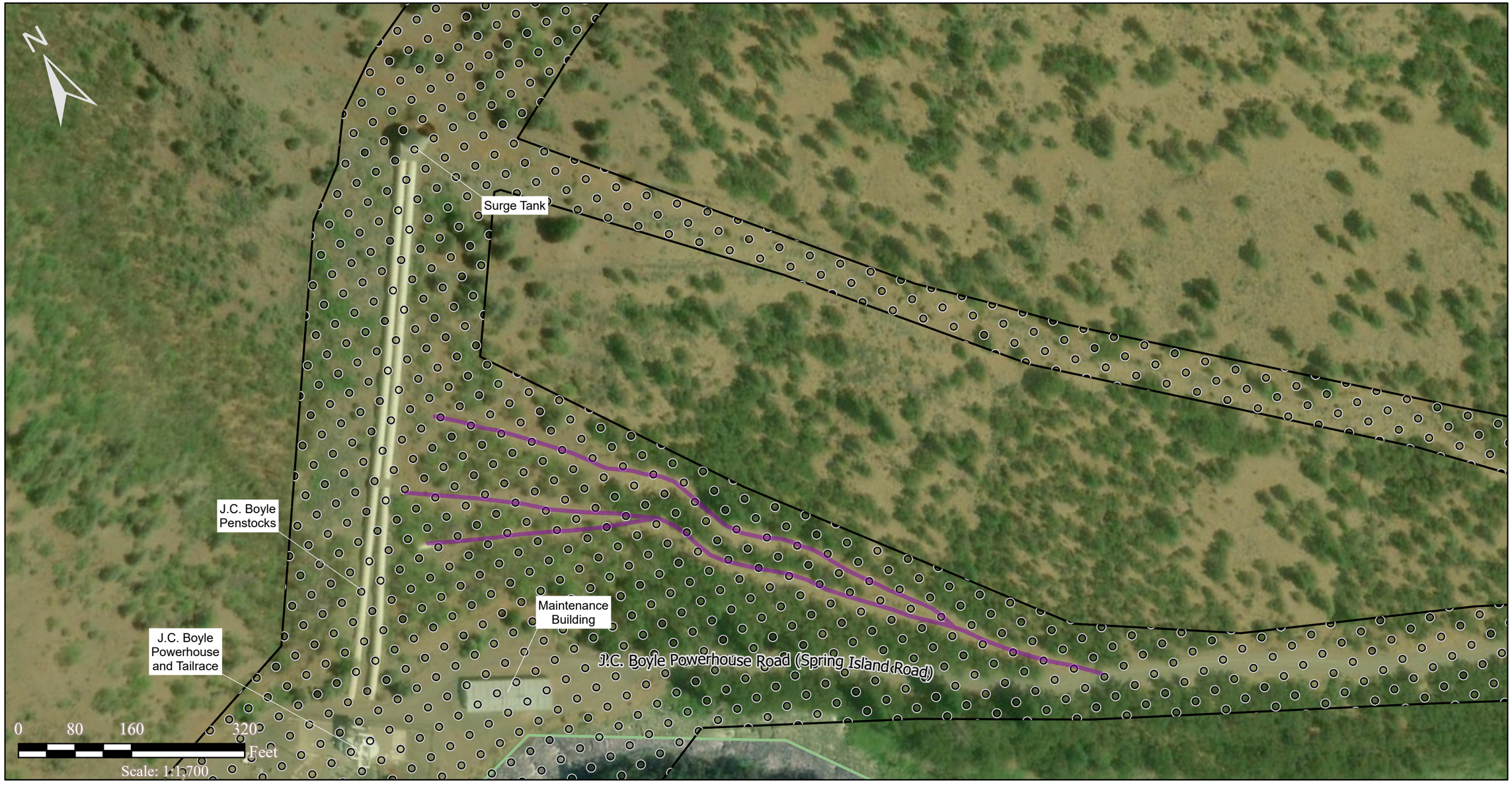

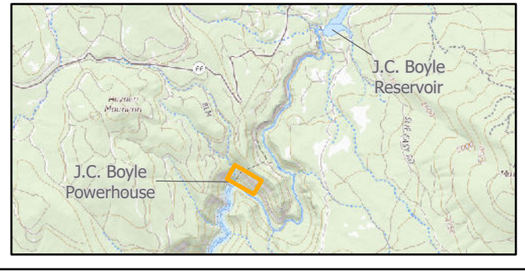

Notes

1.Data Sources: Limits of Work: McMillen Jacobs; Land Ownership: Bureau of Land Management
2. Background: Maxar, Microsoft, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

- Penstock Access Roads
- FERC Boundary

Property Ownership

- Bureau of Land Management

Lower Klamath Project
BLM Use and Occupancy Plan
Figure A-4: J.C. Boyle Powerhouse Penstocks and Penstock Access Roads
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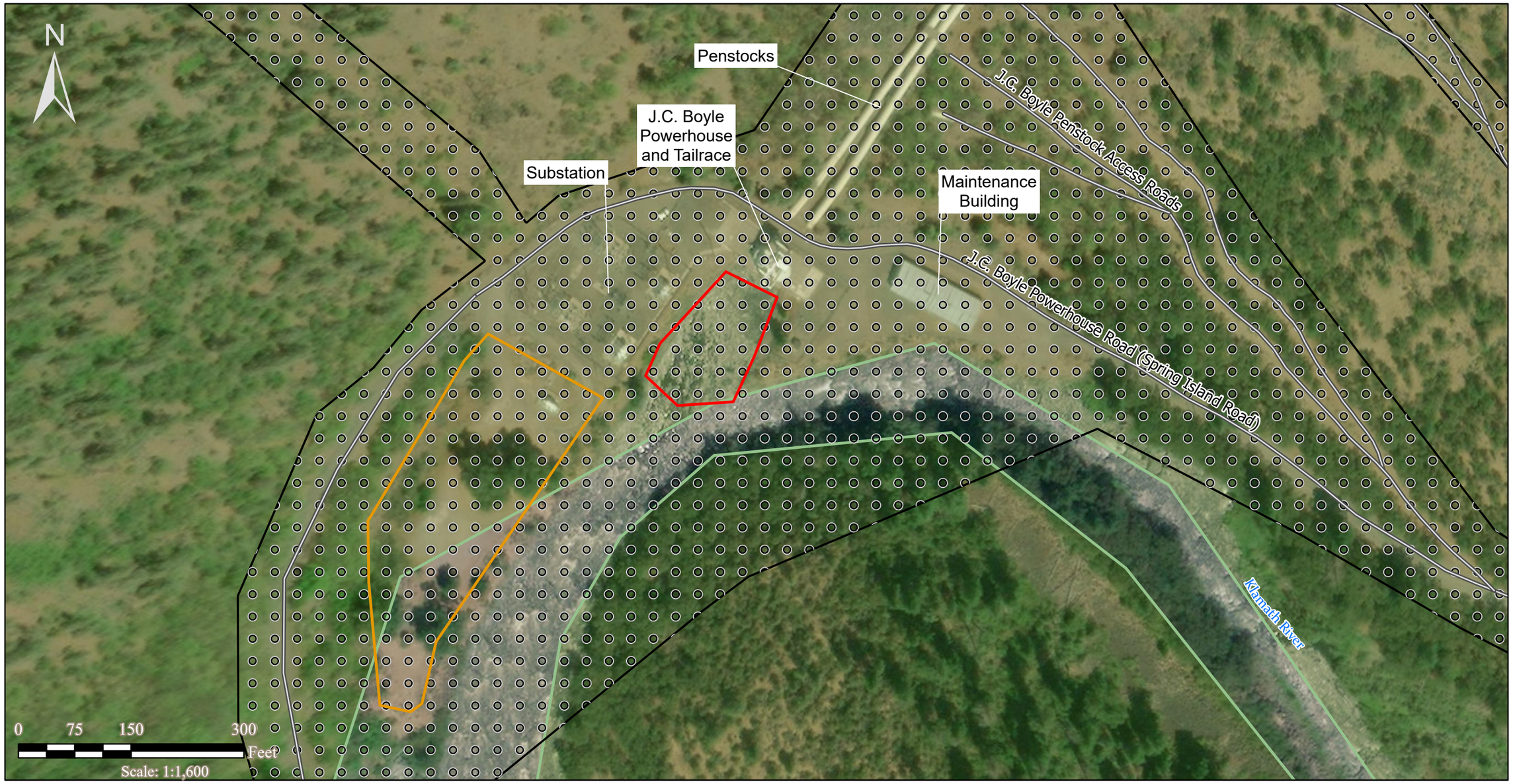

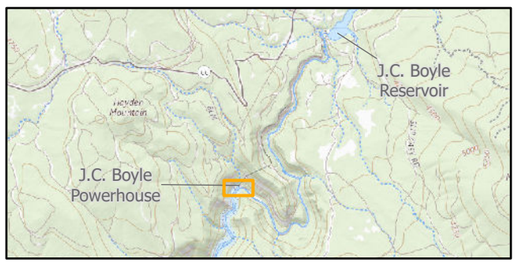

Notes

1. Data Sources: Limits of Work, Staging Sites, Disposal Sites, Access Roads, Power Lines: McMillen Jacobs; Land Ownership: Bureau of Land Management

2. Background: Maxar, Microsoft, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

- Disposal Sites
- Staging Sites
- Access Roads
- FERC Boundary

Property Ownership

- Bureau of Land Management

Lower Klamath Project

BLM Use and Occupancy Plan

Figure A-5: J.C. Boyle Powerhouse and Tailrace Disposal Site

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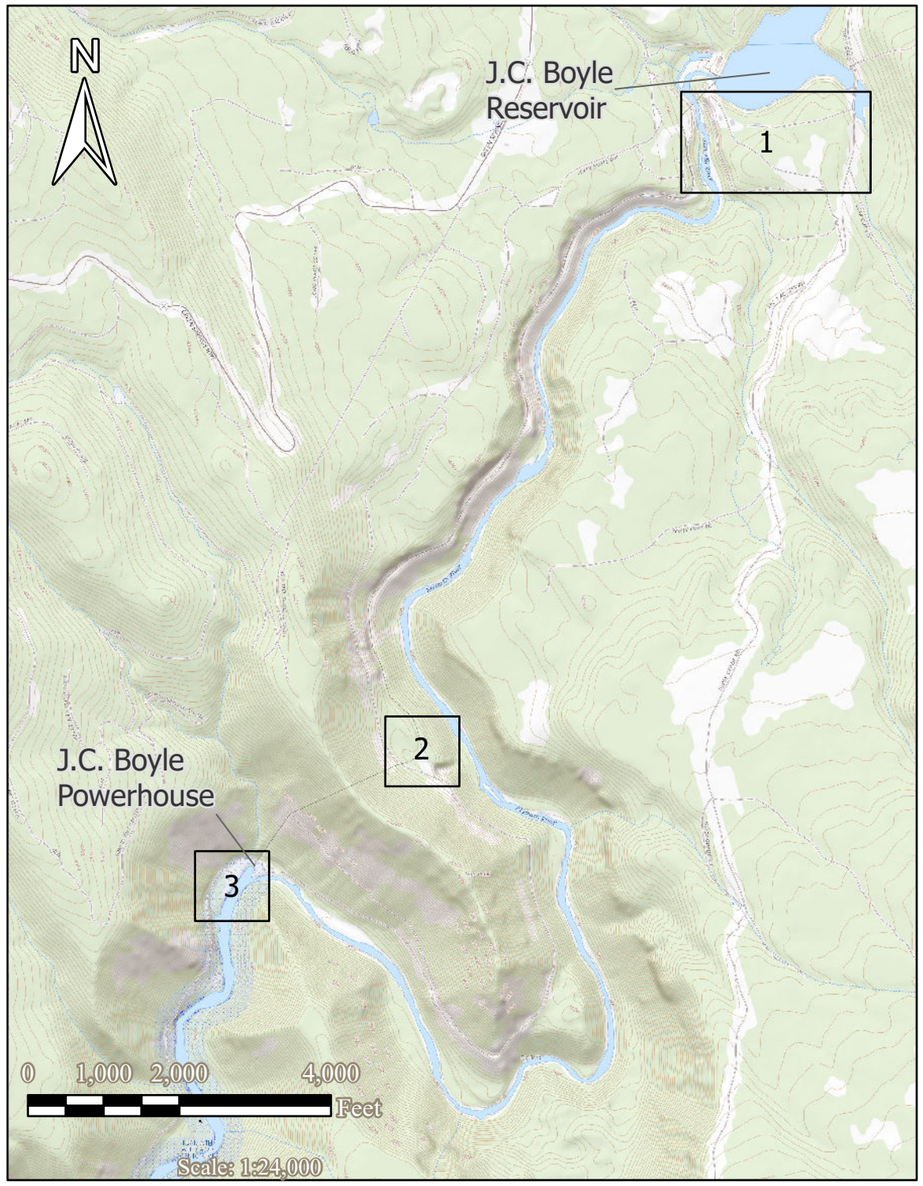

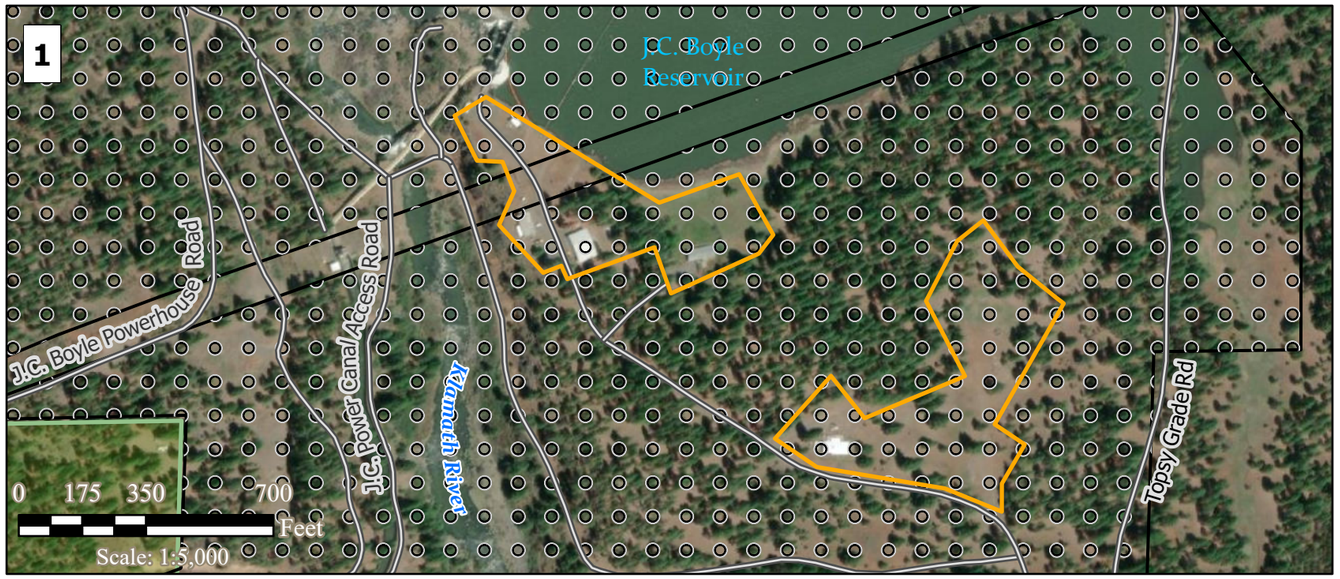

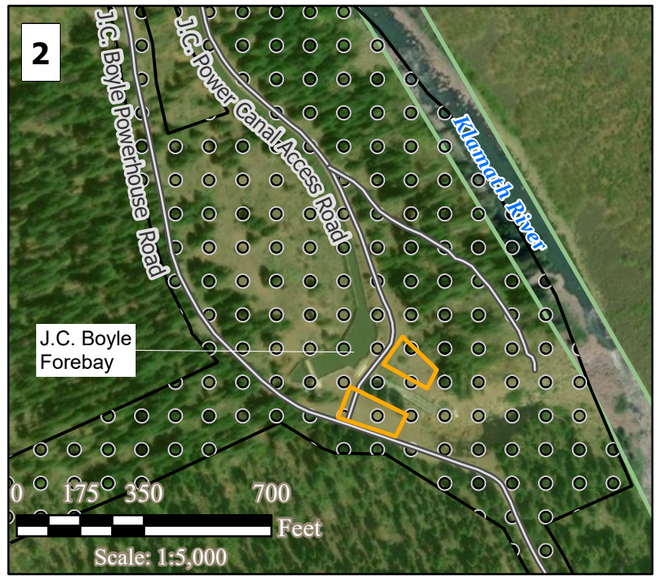

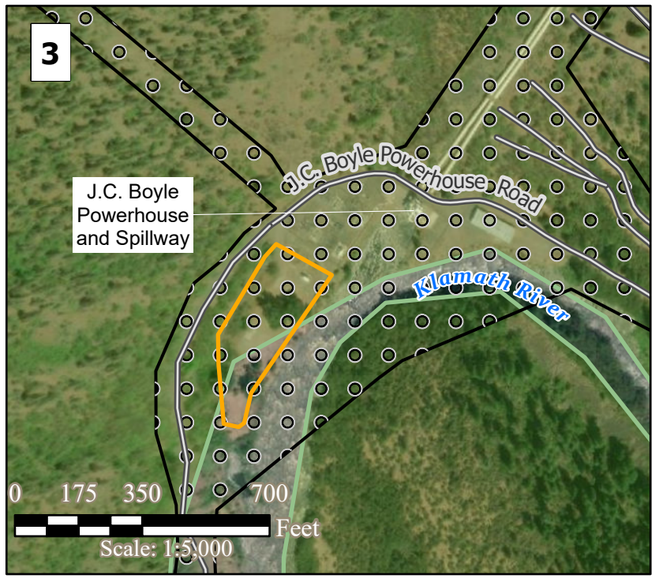

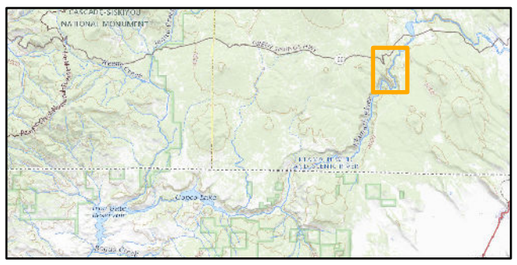

Notes

1.Data Sources: Limits of Work,, Access Routes, Staging, Access Roads, Power Lines: McMillen Jacobs; Land Ownership; Bureau of Land Management

2. Background: Maxar, USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

Legend

- Staging Sites
- FERC Boundary
- Access Routes

Property Ownership

- Bureau of Land Management

Lower Klamath Project

BLM Use and Occupancy Plan

Figure A-6: J.C. Boyle Development Staging Areas

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