

**VIA ELECTRONIC FILING**

May 13, 2024

DEBBIE-ANNE A. REESE
ACTING SECRETARY
FEDERAL ENERGY REGULATORY COMMISSION
888 FIRST STREET NE
WASHINGTON D.C., 20426

Re: Comments on the Environmental Assessment for Application to Surrender License for the Newhalem Creek Hydroelectric Project (P-2705-037)

Dear Acting Secretary Reese:

Seattle City Light (City Light) is pleased to provide comments on the Federal Energy Regulatory Commission's (FERC or Commission) Environmental Assessment (EA), issued on March 29, 2024, for the proposed license surrender and decommissioning of the Newhalem Creek Hydroelectric Project No. 2705 (Project). City Light has proposed to decommission and remove most of the Project features, including the diversion dam, and to retain certain features considered to be historically important. The Project is located on Newhalem Creek, near Newhalem, Whatcom County, Washington. The Project occupies federal lands within the Ross Lake National Recreation Area, managed by the National Park Service (NPS).

City Light appreciates the Commission's reliance on the proceeding's robust record to arrive at a preferred alternative acknowledging the long-term benefit of dam removal on Newhalem Creek, while also identifying appropriate measures to ensure a balance of impacts on affected environmental resources. To augment the effects analyses, City Light offers clarifications organized by section with reference to specific text and concludes with an update on ongoing consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA).

3.1 Project Description

City Light offers the clarification that the roads included in the Project description, items 12 and 14, are not within the FERC Project boundary. The U.S. Forest Service (USFS) constructed both roads after the Project was already operational. Although City Light did not construct the roads, City Light wishes to continue as a good neighbor, so has agreed to decommission these roads as they apply to each alternative analyzed in the EA.



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3.4 Full Removal Alternative

The EA states that under the full removal alternative, “The only [Project] features remaining in place would be the tailrace, since it is part of an intermittent stream, and the Skagit Project’s EAP emergency evacuation route, which includes the diversion dam access road to elevation 840 feet and the trail leading to the lower end of the rock tunnel.” City Light notes that the Hilfiker wall and the concrete retaining wall along the diversion dam access road above elevation 840 feet would remain in place under all alternatives considered. This will be further described and addressed in the Road Decommissioning Plan to be developed in consultation with the NPS.

3.5 Proposed Action (Partial Removal) with Staff-Recommended Measures

One of the EA’s staff-recommended measures is the requirement to: “Conduct three years of monitoring post-dam removal to identify and address any barriers to fish passage that may develop due to sediment movement that have the potential to impede the passage of salmon, steelhead, bull trout or Dolly Varden into or within the lower 0.65-mile section of Newhalem Creek.” This is first stated in EA Section 3.5, and is further mentioned at several locations throughout the EA.

Although City Light’s geomorphology study did not find that aggradation would result from dam removal, forming fish barriers, City Light is supportive of this measure and proposes the following steps to implement it. The stream would be monitored for the presence of fish barriers for 3 years following dam removal while the Project is under FERC’s jurisdiction. Any barriers encountered would be removed with hand tools, since no access to Newhalem Creek exists other than at the Newhalem Creek bridge, and using equipment to remove barriers would result in significant disturbance to riparian and upland habitat. The pedestrian survey would be conducted once annually during low flow, before salmon spawning, after high winter/spring flows have moved any sediment for the year, and prior to upstream anadromous fish migration. The survey would be conducted within the lower 0.65 mile of the creek, below the lowest natural fish barrier, by walking or floating while looking for areas of aggradation resulting in: 1) drops over 6 inches, which are completely across the channel, to a height that exceeds relevant National Marine Fisheries Service juvenile salmonid passage criteria; or 2) long plane-bed areas with shallow water less than 0.5 foot. If fish passage is available at some location across the channel, the obstruction would not be removed.

Additionally, City Light would visually monitor the volume of sediment moved out of the former dam site to help determine when most of the sediment has been transported out of the dam site and barrier monitoring can cease. City Light would note any other major disturbances that deliver large quantities of sediment to the stream (e.g., landslides) to help determine if any barriers found are the result of sediment that was stored behind the Newhalem Creek diversion structure or from non-Project sources.

City Light will further develop the fish barrier monitoring program in consultation with resource agencies and Tribes.



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6.3 Proposed Action and Action Alternatives / 6.3.1 Geology and Soils / 6.3.1.1 Affected Environment / Soils

City Light assumes there was not enough time to incorporate into the EA the NPS-ratified Newhalem Penstock Engineering Evaluation/Cost Analysis (EE/CA) filed with FERC on March 19, 2024; thus, the following summary is provided to further the analysis of potential effects on soil resources. Primarily, City Light believes it important to provide context that the EE/CA (Floyd Snider 2022) was prepared as part of a non-time-critical removal action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the NPS, the lead federal agency under CERCLA.

The EE/CA recommended the No Action Alternative because contaminant concentrations that remained in the soil after the 2017 removal action related to penstock repair do not pose unacceptable risk to people or ecological receptors, and additional removal of soil is not required. The NPS made the EE/CA and Administrative Record supporting the EE/CA available for public comment for 30 days, starting on January 10, 2023. On September 25, 2023, the NPS issued an Action Memorandum recommending the No Action Alternative because risks to public health or welfare or the environment were addressed by the previous removal action. The NPS North Cascades National Park Complex approved the EE/CA on October 31, 2023, and the NPS Environmental Compliance and Cleanup Division Chief ratified it on February 21, 2024.

6.3 Proposed Action and Action Alternatives / 6.3.1 Geology and Soils / 6.3.1.2 Environmental Effects / Streambed Profile and Sediment Mobilization

City Light offers the following clarification to assist with the analysis. Removal of the transformer and overhead transmission lines would not result in sediment mobilization into the Skagit River. The transformers are relatively small and easy to remove, adjacent to a gravel parking lot, and approximately 75 feet from the tailrace (see Photo 1). Removal of the transmission lines only involves removing lines from the poles using a truck-mounted cable reel; as part of the preferred alternative, the poles would be left in place.



Photo 1. View of the three transformers associated with the Newhalem Creek powerhouse. The larger transformer (right) is air cooled.

6.3 Proposed Action and Action Alternatives / 6.3.1 Geology and Soils / 6.3.1.2 Environmental Effects / Effect of Rock Scaling and Road Decommissioning on Slope Stability

The EA states that City Light intermittently provided maintenance for the dam access road after 1969, including the installation of culverts. It is unlikely that City Light installed culverts in the dam access road, however. City Light has recently ascertained that the road continuing above the Newhalem Creek dam contains corrugated metal pipe culverts and a concrete bridge. Because City Light has no records of installing culverts in the dam access road below the dam, and the USFS built the road after the Project was operational, it is likely that the USFS installed all culverts on the dam access road, including the improvements to the road above the dam. To continue as a good neighbor, City Light proposes no changes to its proposal to remove the culverts and re-establish drainage between the muster point and the dam, but notes that the USFS likely installed the culverts in this portion of the road on lands that the NPS currently administers.

6.3 Proposed Action and Action Alternatives / 6.3.1 Geology and Soils / 6.3.1.2 Environmental Effects / Tunnel Leakage

The EA states that "In its application for surrender, City Light identifies leaks in the unlined rock power tunnel as one of the three significant issues that prevents the project from being operational." City Light offers the clarification that the issue leading to the decision to surrender is that water can leak out of a crack in the power tunnel while the power tunnel is pressurized (i.e., "pressurized" refers to the state of the tunnel when the intake gate is open and the power tunnel is full of water to create head for power generation). To distinguish, the Surrender of License Application describes a small amount of water being conveyed down the penstock and into the tailrace (estimated at approximately 3 to 5 gallons of water per minute) that originates from groundwater through natural rock fractures. Because a "leak" is



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typically associated with a problem and has a negative connotation, City Light requests that the final EA use “leaks” or “leakage” only when associated with water leaking out of the tunnel when pressurized or other problematic water entry.

The EA provides that under the full removal scenario, City Light would need to “consider the potential for discharges from the tunnel to cause disturbance and route contaminants in the area down toward and possibly into the tailrace and develop appropriate mitigation.” City Light agrees with the EA on this consideration, as well as with the EA’s recommendation that “appropriate mitigation would depend on the magnitude of the expected flow and may include dispersing the flow across the soil near the penstock or diverting it away from the potentially affected area in a channel or pipe.” City Light respectfully offers for this subsection and the following subsection (Disturbance of Soil Containing Contaminants) that it is unlikely that contaminants would be routed through the power tunnel or adit (i.e., the portion of the power tunnel that contains the penstock for approximately 218 feet) because as part of the Newhalem Creek Hydroelectric Project Decommissioning Environmental Evaluation Report (EER; June 27, 2023) prepared at NPS’ request, no potential environmental concerns are present within the power tunnel, adit, or any other evaluated Project operational activity centers. The EER consisted of a survey, interview with City Light staff, review of document and historical records, and evaluation thereafter of all operational activity centers within the Project footprint aside from the area encompassing the penstock that was already covered under the EE/CA. The EER is attached to this filing in Appendix A.

City Light also offers the following to supplement this subsection of the EA analysis. Signs of erosion and migration of sediment from the penstock to the tailrace will be monitored via the Erosion Monitoring Plan that was prepared on behalf of City Light in coordination with the NPS as part of the final EE/CA and approved No Action Alternative.

6.3 Proposed Action and Action Alternatives / 6.3.1 Geology and Soils / 6.3.1.2 Environmental Effects / Disturbance of Soil Containing Contaminants

The EA states that “removing project features could disturb and transport these accumulated contaminants and thereby pose an increased risk to the health of plants, wildlife and humans.” City Light offers that the EE/CA determined that no excess human health or ecological risk exists with current site conditions (i.e., concentrations). While movement of soil/sediment could result in an aggregation of any remnant contaminated sediments/soils, it would not likely increase their concentration; therefore, the risk to human health or the environment as assessed in the EE/CA would remain unchanged.

In response to the NPS’ requests for a complete environmental site assessment of the existing footprint (excluding the penstock) to determine whether any potential environmental liability exists from City Light’s operations, City Light completed the EER and provided the report to the NPS for review and comment. The EER concluded that no potential environmental concerns are present, and City Light received no comments on the document. A copy of the EER is attached as Appendix A.



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Regarding the potential for legacy polychlorinated biphenyls (PCBs), the two small, liquid-cooled transformers are labeled as not containing PCBs. The remaining larger transformer is air cooled and does not contain PCBs (see Photo 1 above). Furthermore, the EER evaluated the potential for legacy hazardous materials and concluded that no potential environmental concerns exist. City Light agrees with the EA that the Spill Plan, to be developed, will address any risks during decommissioning.

Lastly, the EA states that "In the long-term, Commission staff expect a permanent beneficial effect from removing any soils containing hazardous materials during construction." City Light does not propose to remove any soils as part of the preferred alternative or the full removal alternative. As documented by the EE/CA and NPS's 2023 Action Memo, no further action is necessary under CERCLA. Further, under current state and federal cleanup thresholds, there is no risk that would require removal.

6.3 Proposed Action and Action Alternatives / 6.3.3 Terrestrial Resources / 6.3.3.2 Environmental Effects / Effects on Vegetation

The EA states that the road decommissioning plan would include removal of approximately eight existing culverts. City Light has surveyed the site since the Surrender of License Application was filed and verified that only four culverts are in the section of road proposed for decommissioning. All four culverts would be removed.

6.3 Proposed Action and Action Alternatives / 6.3.3 Terrestrial Resources / 6.3.3.2 Environmental Effects / Effects on Wildlife

The EA states that "Retaining access to the power tunnel for bats or other small wildlife would require City Light to transport the 50 cubic yards of debris that it proposes to use to seal the upper end of the tunnel off-site, which would require an additional 16 haul trips and add a day to the debris removal process."

The Surrender of License Application provided that approximately 50 cubic yards of concrete from dam removal could potentially be disposed in the vertical shaft portion of the power tunnel (see Figure 1). Since the vertical shaft is adjacent to the dam, this would reduce truck trips offsite by 15 trips, minimizing impacts on recreation and wildlife. After discarding the construction debris into the vertical shaft, the opening into the vertical shaft would be sealed with fresh concrete atop the concrete rubble, creating a seal to prevent water from entering the shaft. The vertical shaft is not currently accessible to wildlife (including bats) as it is blocked by the intake gate on the upper end and a concrete plug at the lower end, as shown in Figure 1. Bats and other wildlife do currently have access to the lower end of the more-or-less-horizontal adit where it daylights, as shown in Figure 1. No concrete would be placed in the adit or any areas presently accessible to wildlife. The concrete plug currently prevents wildlife access to the power tunnel and shaft and would continue to do so after decommissioning. Thus, the current proposal to place 50 cubic yards of concrete into the vertical shaft, seal the intake, and install a gate on the lower end of the adit would limit truck trips and ensure that all access currently available to smaller wildlife is continued after decommissioning.

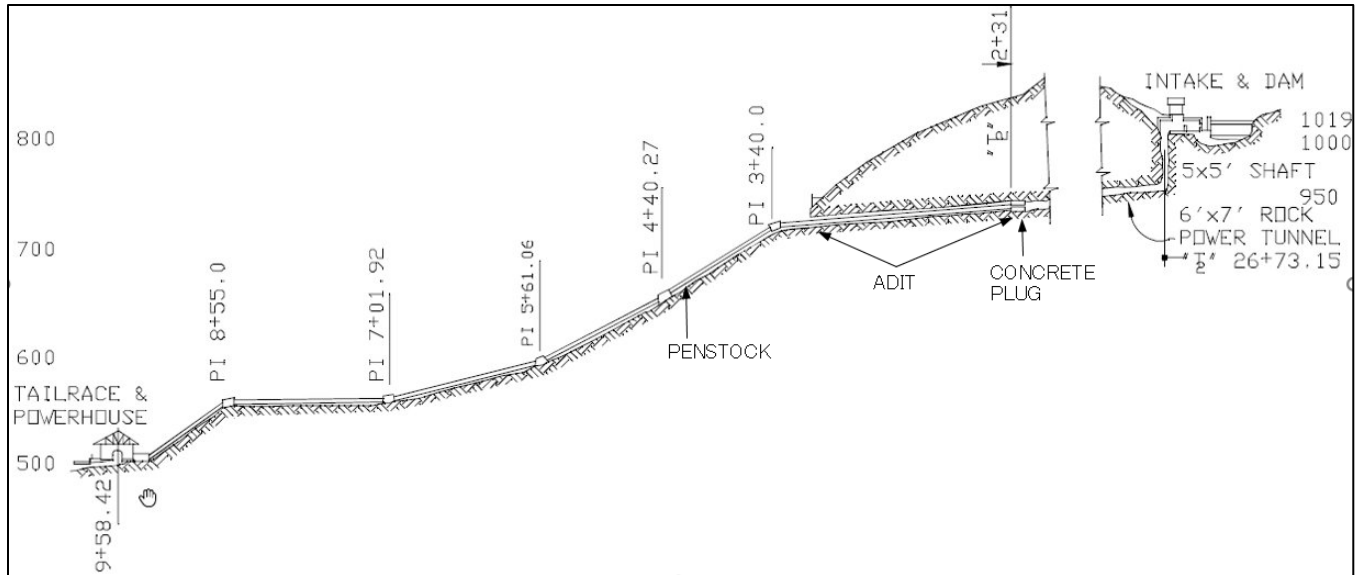


Figure 1. From left to right: the powerhouse, penstock, adit containing the penstock, concrete plug, power tunnel, vertical shaft, intake, and dam.

6.3 Proposed Action and Action Alternatives / 6.3.4 Threatened and Endangered Resources

In its assessment of potential effects from the Project on species and habitats protected under the Endangered Species Act (ESA), the EA references the Biological Assessment (BA) that City Light filed on December 12, 2022. City Light understands that FERC will proceed with ESA Section 7 consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, relying on City Light’s December 2022 BA to initiate formal consultation.

Regarding discussion of ESA effects in the EA, City Light offers the following comments:

- In *Section 6.3.4.1 Affected Environment / Essential Fish Habitat (EFH)*, the EA states, “City Light believes that the presence of two natural waterfalls that are impassable to fish preclude EFH in Newhalem Creek upstream of RM 0.65.” City Light would like to add that these barriers are identified in *A Catalog of Washington Streams and Salmon Utilization* (Williams and Phinney 1975). An excerpt of the fish barrier map from Williams and Phinney (1975) is provided in Figure 2 below.



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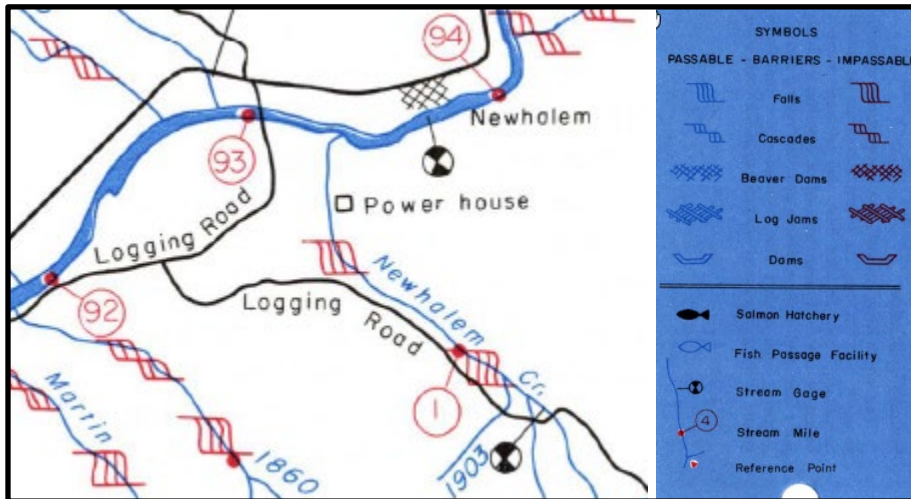


Figure 2. Excerpt from Upper Skagit, Newhalem Area map in Williams and Phinney (1975) illustrating impassable fish barriers at RM 0.65 and 1.0.

- In Section 6.3.4.2 Environmental Effects / Puget Sound Steelhead and Puget Sound Chinook Salmon / Diversion Dam, Headworks, and Tailrace Barrier Removal and elsewhere, the EA states that potential threats to Puget Sound steelhead and Puget Sound Chinook salmon resulting from removal of the diversion dam, headworks, and tailrace barrier include **loss of habitat, disturbance, and direct mortality from construction machinery (emphasis added)**. In fact, no loss of habitat, disturbance, or potential for mortality due to construction machinery during dam, headworks, and tailrace removal would occur because the dam and headworks areas are not accessible to these species and the tailrace removal would occur in the dry during the time of year when the tailrace is disconnected from the Skagit River.

If FERC is concerned that flows could transfer large quantities of sediment downstream during removal of the dam or headworks, temporarily burying spawning gravels and reducing habitat suitability, City Light refers FERC staff to the BA and the geomorphology report, which explain and describe this scenario as highly unlikely. Fine streambed material is lacking upstream of the dam, and larger material transport during the first few years following dam removal would benefit the lower reach of Newhalem Creek by increasing coarse sediments and larger cobbles that provide habitat complexity and create pools for rearing and holding.

- In Section 6.3.4.2 Environmental Effects / Bull Trout and Dolly Varden / Diversion Dam, Headworks, and Tailrace Barrier Removal, the EA states "Instream work would potentially overlap with upstream migration for pre-spawning adult bull trout and Dolly Varden. Given that cofferdams would be removed by September 1 when flows are typically low, and because substrate in the impoundment area contains few fines, turbidity levels in spawning areas located more than 1,900 feet downstream are expected to be minimal and remain within sublethal limits for adults or incubating eggs." City Light observes that removal of cofferdams by September 1 would ensure that in-water work does not overlap with bull



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trout spawning periods in the highly unlikely event they spawned in the lower reach of Newhalem Creek; there is no basis to assume that incubating eggs would be present.

- In *Section 6.3.4.2 Environmental Effects / Bull Trout and Dolly Varden / Post-Construction Changes in Sediment Transport* and elsewhere, the EA reads as if Newhalem Creek is definitively occupied by bull trout. All statements on occupancy should reflect the “potential” occurrence of bull trout because, as noted in *Section 6.3.4 Threatened and Endangered Resources*, few, if any, observations of bull trout in Newhalem Creek exist, and they are unlikely to be present. For example, the EA states, “Under the proposed action, dam removal could affect stream geomorphology above and below the dam and increase sediment transport and turbidity downstream in habitat occupied by bull trout and Dolly Varden.” This could be revised to say “...in habitat potentially occupied by bull trout.” In another example, the EA states, “The lower reach of Newhalem Creek provides critical habitat for bull trout spawning.” City Light suggests revising to: “The lower reach of Newhalem Creek is designated as critical habitat for bull trout spawning and rearing.” City Light recommends this revision because no evidence exists that the habitat is actually occupied or used for spawning or rearing, but the designation indicates the quality of habitat and instream temperatures may be suitable for these life stages.
- In *Section 6.3.4.2 Environmental Effects / Essential Fish Habitat* and in Appendix A, the EA concludes that “effects of sediment transport under both the proposed action and the full removal alternative *may affect, and are likely to adversely affect*, EFH in lower Newhalem Creek, and *may affect, but are not likely to adversely affect*, EFH in the Skagit River” (emphasis added). Regarding Newhalem Creek, the BA concludes that the proposed action *will not adversely affect* EFH in Newhalem Creek because any negative effects on EFH would be temporary in nature and primarily related to the transport of accumulated sediment during seasonal high flows. The temporary degradation of rearing habitat in Newhalem Creek during seasonal high flows would be offset by the Project-related benefits to various stream functions. Beneficial effects would include long-term restoration of the hydrologic, sediment transport, and nutrient transport regimes downstream of the current diversion. Temporary effects on EFH would be minimized through implementation of best management practices and conditions of all future permits and authorizations during construction. Regarding the Skagit River, City Light notes there is no “*may affect, not likely to adversely affect*” determination for EFH as there is under the ESA. Therefore, guided by the *will not adversely affect* determination for EFH in Newhalem Creek, the applicable terminology is that the proposed action “*will not adversely affect*” EFH in the Skagit River.

6.3 Proposed Action and Action Alternatives / 6.3.5 Recreation, Land Use, and Aesthetics / 6.3.5.1 Affected Environment

The EA provided trail count data from 2014 for the Trail of the Cedars. City Light installed a trail counter along the Trail of the Cedars in 2022, which recorded 18,303 users from May through September (from *RA-01 Recreation Use and Facility Assessment Report, October 2023, Updated Study Report, Additional Information Per FERC Study Plan Determination, Skagit River Hydroelectric Project No. 553*).



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6.3 Proposed Action and Action Alternatives / 6.3.6 Cultural and Historic Resources / 6.3.6.1 Affected Environment / Cultural History Overview

The EA states that “According to City Light’s 1992 license application, no archaeological evidence of the Upper Skagit village that was located near the Newhalem Project remains, and it is likely that any associated cultural materials have long since eroded and been redeposited downstream.”

City Light offers more recent information regarding this location. The Washington Information System for Archeological and Architectural Records Data (WISAARD) shows that precontact archaeological material has been identified within the town of Newhalem. Although within a disturbed context, it is likely associated with the Upper Skagit village. Also, Newhalem (and likely the village) is situated on a terrace that was not prone to the erosion suggested here, which made it a good location for settlement, both precontact and historically.

6.3 Proposed Action and Action Alternatives / 6.3.6 Cultural and Historic Resources / 6.3.6.1 Affected Environment / Identified Cultural Resources

The EA states that “In its application for surrender of license, City Light states that an updated district nomination form was anticipated in 2022 in compliance with existing license requirements.” For clarity, the updated nomination is a requirement of the Skagit River Hydroelectric Project FERC license (No. 553), not a condition of the Newhalem Creek Hydroelectric Project FERC license (No. 2705).

6.3 Proposed Action and Action Alternatives / 6.3.6 Cultural and Historic Resources / 6.3.6.2 Environmental Effects / Effects of Partial Decommissioning on Archaeological and Built Resources and Traditional Cultural Properties

The EA provides that “Commission staff finds the proposed surrender of the project and removal of project facilities would end the Commission’s jurisdiction over archaeological sites, historic hydroelectric facilities, and TCPs that are located within the project APE and would remove these resources from the federal protection afforded by the NHPA.” City Light understands that federal protection would still apply since historic properties occur on federal land.

Additionally, City Light recognizes that under the NHPA, National Register of Historic Places (NRHP)-eligible properties have the same protections as NRHP-listed properties; however, City Light would like to clarify in the *Effects on Historic Built Environment Resources* section that the proposed action would result in permanent, adverse effects to NRHP-listed historic structures, rather than NRHP-eligible historic structures. Also, the Skagit River and Newhalem Creek Hydroelectric Projects historic district is *listed* rather than *eligible* for listing in the NRHP.



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6.3 Proposed Action and Action Alternatives / 6.3.6 Cultural and Historic Resources / 6.3.6.2 Environmental Effects / Effects of Complete Decommissioning on Archaeological, Historic Built Environment Resources and Traditional Cultural Properties / Development of the CRMMP

The EA states: "Commission staff finds that development of the proposed CRMMP, in consultation with the USIT and other parties, would serve to protect and mitigate for any potential adverse effects to historic and cultural properties under the full dam removal alternative." City Light agrees and suggests that the last words of this sentence, "the full dam removal alternative," be replaced with "under either alternative" to be consistent with the preceding part of the paragraph. City Light also suggests a clarification that the dam would be removed in both alternatives.

Summary of Section 106 Activities for the Project

In a letter dated July 8, 2021, FERC designated City Light as the Commission's non-federal representative to assist with compliance with Section 106 of the NHPA. Following this designation, City Light conducted online and in-person meetings with affected Tribes and the Department of Archaeology and Historic Preservation (DAHP) to explain the intent of the decommissioning and license surrender, and solicit initial input about potential effects to historic properties and any other information the consulting parties would like to provide.

- Upper Skagit Indian Tribe (online) 8/2/2021
- DAHP (Online) 8/25/2021
- Sauk-Suiattle Indian Tribe (online) 9/16/2021
- Swinomish Indian Tribal Community (online) 9/30/2021
- Upper Skagit Indian Tribe (in-person) 9/15/2021
- Sauk-Suiattle Indian Tribe (in-person) 9/23/2021

City Light requested concurrence on the Project's Area of Potential Effect (APE) on August 11, 2022. On August 12, 2022, DAHP concurred with the APE. City Light received no other comments regarding the APE.

To identify historic properties within the APE, City Light has completed the following actions:

- On June 26, 2023, City Light distributed the Historic Built Environment (HBE) report to consulting parties for review and comment. City Light revised this report based on comments from the Upper Skagit Indian Tribe, NPS, and DAHP. City Light submitted the final HBE report to the DAHP on February 2, 2024, with a letter requesting concurrence on NRHP eligibility recommendations outlined in the report. DAHP concurred with those recommendations on February 20, 2024. The headworks, power tunnel, and penstock were confirmed eligible for listing in the NRHP. DAHP also concurred with the eligibility of two additional historic properties: the Newhalem Creek Bridge and the Trail Network.
- City Light provided an Archaeological Fieldwork Plan to all consulting parties for review and comment on September 1, 2023. City Light conducted archaeological surveys of the areas identified in the Archaeological Fieldwork Plan on September 14, 19–21, 27, and 27, 2023.



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City Light provided a final draft report summarizing the findings of the archaeological survey to affected Tribes and the DAHP on April 11, 2024, and the NPS on April 17, 2024. The survey identified two historical archaeological sites: a refuse scatter, which was not recommended eligible for listing in the NRHP; and remnants of the Gatehouse Trail that workers used to access the headworks during initial dam construction, which was recommended eligible for listing in the NRHP. The survey identified no precontact archaeological material.

- On January 11, 2024, City Light contacted the Upper Skagit Indian Tribe to ask for its assistance in assessing effects to its recorded and NRHP-eligible Traditional Cultural Property (TCP), 45WH450. The City Light archaeologist subsequently had a phone conversation with Bob Mierendorf, archaeologist for the Tribe, to discuss potential impacts from the proposed action on the TCP. The Tribe submitted a report to City Light on March 19, 2024, that assessed the effects to 45WH450 from the proposed action.
- On January 26, 2024 City Light contacted the Swinomish Indian Tribal Community and Sauk-Suiattle Indian Tribe to ask for their assistance in identifying any TCPs that may be within the APE. City Light received no response from either Tribe.

Once comments are received on the archaeological survey report, expected around May 17, 2024, City Light will finalize the report and prepare a summary of effects letter for all historic properties, which will also include initial ideas for mitigating adverse effects. This letter will be distributed to the Section 106 consulting parties and filed with FERC along with all identification reports.

City Light looks forward to continuing to work with FERC, resource agencies, Tribes, and other interested parties on the license surrender and decommissioning plan for the Project. Should you have any questions, please contact me at (206) 684-3117.

Sincerely,

A handwritten signature in blue ink, appearing to read "Shelly Adams".

Shelly Adams
Decommissioning Project Manager
Newhalem Creek Hydroelectric Project
Seattle City Light

Attachment: Newhalem Creek Hydroelectric Project Decommissioning Environmental Evaluation Report

Cc: Diana Shannon, FERC
Mark Ivy, FERC



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Appendix A

Newhalem Creek Hydroelectric Project Decommissioning Environmental Evaluation Report



SoundEarth Strategies, Inc.
1011 SW Klickitat Way, Suite 212
Seattle, Washington 98134

NEWHALEM CREEK HYDROELECTRIC PROJECT DECOMMISSIONING ENVIRONMENTAL EVALUATION REPORT



Property:

Newhalem Creek Hydroelectric Project Property
Newhalem, Washington

Prepared for:

Seattle City Light
PO Box 30423
Seattle, Washington

Report Date:

June 27, 2023

Newhalem Creek Hydroelectric Project Decommissioning Environmental Evaluation Report

Prepared for:

Seattle City Light
PO Box 30423
Seattle, Washington 98124

Newhalem Creek Hydroelectric Project Property
Newhalem, Washington
Seattle, Washington 98267

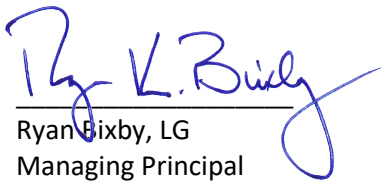
Project No.: 1267-030

Prepared by:



Clare Tochilin, LG
Senior Geologist

Reviewed by:



Ryan Bixby, LG
Managing Principal

June 27, 2023



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ACRONYMS AND ABBREVIATIONS

BMP	best management practice
FERC	Federal Energy Regulatory Commission
Golder	Golder Associates
HBMS	Hazardous Building Materials Survey
NPS	National Park Service
PCB	polychlorinated biphenyl
PLC	programmable logic control
the Property	The Newhalem Creek Hydroelectric Project Property located in Newhalem, Washington
SCL	Seattle City Light
SoundEarth	SoundEarth Strategies, Inc.
SDS	safety data sheet

Newhalem Creek Hydroelectric Project Decommissioning Environmental Evaluation Report

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth) has completed an environmental evaluation of the Newhalem Creek Hydroelectric Project Property located in Newhalem, Washington (the Property) on behalf of Seattle City Light (SCL), which has operated a dam on Newhalem Creek since approximately 1921. SCL intends to decommission the Newhalem Creek dam and associated infrastructure and return the land to the landowner, the National Park Service (NPS). This evaluation was completed to comply with a request by NPS “to determine whether any potential environmental liability exists” due to the historical operation of the Newhalem Creek Hydroelectric Project.

2.0 PURPOSE

The purpose of the environmental evaluation was to determine whether there are potential issues of environmental concern associated with the historical operation of the Property and the future decommissioning of the Newhalem Creek Hydroelectric Project. The environmental evaluation was performed according to the following process:

- Conducting a site visit to evaluate Property conditions, observe building materials and materials used and/or stored at the Property, and conduct interviews with maintenance staff.
- Reviewing available documents and historical records for the Property to evaluate current and historical Property operations and maintenance activities.
- Evaluating whether there are potential issues of environmental concern associated with the Property that may have resulted in environmental impacts based on the findings of the site visit and document review.
- If potential issues of environmental concern are identified, sampling of environmental media may be warranted to supplement this evaluation.

3.0 PROPERTY BACKGROUND

A dam on Newhalem Creek was initially proposed in 1918 to provide electricity for the construction of the nearby Gorge Powerhouse dam. Construction began on the Newhalem dam and powerhouse in 1920, and the Newhalem Creek Hydroelectric Project began operation in 1921. The original facility included the construction of a log crib dam, gatehouse, power tunnel, adit, tailrace, and powerhouse. The powerhouse was initially equipped with a double-hung Pelton wheel and a horizontal shaft generator.

The original powerhouse burned down in 1966 after an electrical fault. During the fire at the powerhouse, the generator remained operational. Between 1968 and 1969, a new powerhouse was constructed, and the turbines and generator were refurbished. As part of the refurbishing process, several of the components of the turbines and generator were sandblasted at an off-site location. A new concrete dam and gatehouse were also constructed in 1969 as part of the reconstruction effort, and the existing turbines were repaired at the powerhouse in 1971. In 1983, the diversion dam and apron, which were damaged from bedload abrasion, received major structural repairs. Maintenance records indicate that the generator at the powerhouse continued operation until it was removed in 1998. The existing Generator 20 was rebuilt and installed in 1999.

Based on maintenance records and interviews with staff familiar with the facility, Generator 20 has not consistently generated power since approximately 2010. The powerhouse was shut down at this time because the programmable logical control (PLC), which is an automatic gate function that controls flows, was not functioning properly. The PLC was upgraded between 2010 and 2015; however, due to technical issues and an overheating transformer in 2015, the generator did not continue operation. SCL made an additional attempt to restart the generator in 2017 following the replacement of the penstock's saddles in 2016. However, the attempt was stopped after a leak was detected in the power tunnel. No attempts have been made to generate electricity at the powerhouse since 2017.

SCL has filed a surrender of license application with the Federal Energy Regulatory Commission to decommission the Newhalem Creek Hydroelectric Project. Decommissioning may involve removal of all infrastructure or only certain elements.

4.0 DOCUMENT REVIEW

SCL provided inspection reports, drawings, project specifications, photographs, maintenance records, chemical inventories, material safety data sheets, past license and permit applications, spill reports, and other records for review as part of SoundEarth's evaluation. A selection of applicable documents is summarized below.

4.1 1996 FEDERAL ENERGY REGULATORY COMMISSION ENVIRONMENTAL ASSESSMENT

Prior to issuing an updated license for the Newhalem Creek Hydroelectric Project, the Federal Energy Regulatory Commission (FERC) completed an environmental assessment for the facility in 1996. The assessment reviewed the effects of the facility on soils, water quality, animal and plant life, gravel passage, cultural resources, and land use. None of these elements were found to be significantly impacted by the operation of the facility. The assessment required environmental mitigation elements, including the implementation of an erosion and drainage control plan, removal of gravel and wood debris located behind the diversion dam, and preparation of a cultural resource management plan. The assessment concluded that the issuance of an updated license with the mitigation measures described above would not significantly affect the quality of the human environment (FERC 1996).

4.2 2013 GOLDER ASSOCIATES POWER TUNNEL SURVEY

Golder Associates (Golder) completed an inspection of the power tunnel in June 2013 in an effort to identify the general structural geologic framework. Minor rockfall and associated cracking was observed in the tunnel during the 2013 Golder inspection. Photographs indicate that the tunnel is empty of any man-made structures, with the exception of a conduit containing communication lines and an intake grate located at the opening of the penstock (Golder 2013).

5.0 ENVIRONMENTAL EVALUATION

The Newhalem Creek Hydroelectric Project is composed of five main operational activity centers at the Property: the penstock, the adit, the power tunnel, the powerhouse, and the headworks. The penstock and surrounding area have been fully assessed under a Comprehensive Environmental Response, Compensation, and Liability Act Time Critical Removal Action and Non-Time Critical Removal Action Engineering Evaluation and Cost Analysis and are therefore not included in this evaluation.

SoundEarth conducted a site visit to observe the Newhalem Creek Hydroelectric Project on September 22, 2022. In concert with the site visit, SoundEarth reviewed maintenance records and safety data sheets (SDSs) and conducted interviews with maintenance staff. The following sections summarize the results of the environmental evaluation of the four applicable activity centers.

5.1 HEADWORKS

The headworks includes a 45-foot long by 10-foot high concrete diversion dam, along with a concrete apron and concrete infilling just downstream of the diversion dam. Metal sheeting is located on the downstream infilling to provide additional protection to the concrete. Water from Newhalem Creek flows through a sluiceway located east of the diversion dam. The sluiceway can be closed by a gate, which directs the water into the power tunnel. The gate has not been closed since 2017, which was the last time the powerhouse was operational.

The control valve for the gate is located in a small wooden gatehouse located east of the diversion dam. The gatehouse sits atop a concrete bulkhead that supports the power tunnel intake. The wooden exterior of the gatehouse is unpainted; according to SCL staff, a wood stain was historically applied to the exterior of the gatehouse, but there is no ongoing staining process. Records of the wood stain contents were not available. Wood staining products typically contain mineral spirits or other volatile components. However, these volatile components evaporate after the stain is applied to the wood and do not constitute an ongoing potential for environmental concern. Painted surfaces on the interior of the gatehouse included walls and the access point to the power tunnel. No chipped paint, spills, or other paint-related releases were observed in the gatehouse.

Four small lubricant containers are located on a shelf on the northern portion of the gatehouse. One small unlabeled container of grease and one unlabeled aerosol can are located south of the control valve. No spills or stains were observed in the vicinity of the containers. A small storage shed is located on the northern portion of the gatehouse. The shed contains several tools, one container of lubricant, one container of disinfectant, one container of bleach, and an unlabeled spray bottle. No spills or stains were observed in the vicinity of the containers, and no spills of materials stored within the gatehouse or storage shed were reported in the documents reviewed by SoundEarth or during interviews with facility personnel.

A pedestrian bridge crosses Newhalem Creek to access the gatehouse from the road. The current bridge was reportedly constructed in 2009 to replace a former log bridge.

Considering the minor chemical storage and the absence of exterior painted surfaces at the gatehouse, as well as the lack of indication of spills of stored materials, no potential environmental concerns related to current or historical operations or conditions are present at the headworks. Therefore, further environmental evaluation in the vicinity of the headworks is not warranted.

No significant concerns related to the demolition and removal of the headworks and gatehouse were identified during the environmental evaluation. Also, SoundEarth understands that, if demolition is conducted, a Hazardous Building Materials Survey (HBMS) consistent with standard practices will be conducted by SCL prior to the work to plan for removal, containment, worker safety, and disposal of any identified hazardous building materials in accordance with the City of Seattle's 2023 Standard Specifications, as well as local and federal regulations. SoundEarth understands that SCL will implement all appropriate best management practices (BMPs) during demolition activities, decommissioning and removal of equipment within the gatehouse, and handling and disposal of demolition waste.

5.2 POWER TUNNEL

The power tunnel is a 2,400-foot unlined rock tunnel that is approximately 6 feet wide and 7 feet tall. The power tunnel connects to the adit and penstock via a concrete plug on the downstream end. The access point for the power tunnel is located in the gatehouse at the headworks. Based on interviews with SCL staff, the power tunnel has not been accessed by staff since 2016, when a metal access ladder located at the power tunnel intake was removed. Currently, the tunnel can only be accessed by rappelling down a vertical shaft or through a shaft in the penstock piping in the adit.

While the hydroelectric project is not currently operational and does not direct water to the power tunnel, a small amount of groundwater naturally infiltrates through the rock walls of the power tunnel and the vertical rock shaft leading from the gatehouse to the power tunnel, which is typical of bedrock tunnels. This groundwater flows through the power tunnel into the penstock piping. The groundwater infiltration from the power tunnel is entirely captured by the concrete plug and contained inside the penstock and does not flow into the floor of the adit. After flowing through the penstock, the water is discharged into the tailrace north of the powerhouse. The minor infiltration of groundwater into the power tunnel is naturally occurring and does not represent a current or potential future environmental issue.

The opening to the vertical rock shaft located in the gatehouse was observed during the site visit. A steady flow of water was observed at the bottom of the shaft. Based on interviews with SCL staff, the only man-made features in the power tunnel are communication and electrical lines located within a conduit along the rock walls (see photographs in Appendix A). The previous hard-wired telephone system was removed from the power tunnel in 2015 when the existing conduit was installed.

While the interior of the power tunnel was not observed during SoundEarth's site visit due to access limitations, photographs of the power tunnel interior taken during previous inspections were reviewed as a part of this evaluation and are included in the attached photolog. The photographs show bare rock walls along the tunnel. No visible indications of chemical storage or of any painting, coating, or epoxy applications were observed in photographs taken in the tunnel.

Since its construction, the only use of the power tunnel has been to serve as a conduit for water provided from the diversion dam, and no man-made features or materials have been or will be present within the power tunnel, with the exception of the existing communication and electrical lines. Additionally, no maintenance activities or other activities have been or will be conducted within the power tunnel. Considering the minimal access to the power tunnel since its construction and the lack of chemical or equipment storage, painted walls, or activities that may have involved the presence of or resulted in releases of hazardous materials, no potential environmental concerns are present within the tunnel; therefore, further environmental evaluation of the power tunnel is not warranted. There is no current or potential future environmental risk associated with the power tunnel during or following the planned decommissioning activities.

5.3 ADIT

The adit is a 6-foot wide by 7-foot high rock-lined tunnel extending 218 feet in length that contains a portion of the penstock. The adit and penstock connect to an unlined rock power tunnel via a concrete plug on the upper end. Communication and electrical lines are located within conduit running alongside the penstock up to the concrete plug, and lighting is present overhead.

At the time of the site visit, the paint on the penstock within the adit was in generally good condition with minor chipped spots along the top of the piping. The floor of the adit is composed of a mixture of gravel and some sand, which is typical of a bedrock tunnel. With the exception of a few paint chips observed on the floor of the adit, the ground surface within the adit is composed of naturally occurring dirt and rock absent of paint chips, indicating that soil beneath the penstock has largely not been impacted by potential lead-containing paint chips.

Available historical records indicate that the portion of the penstock located within the adit was painted in 1987 and in 2012. SDSs for the products used during the 2012 painting event were reviewed; none of the products contained lead or other heavy metals. Records of products used during the 1987 painting event were not available. If chipped paint was observed during repainting activities, plastic sheeting was placed beneath the piping, and the chipped paint was scraped off. The waste paint was then containerized at the Newhalem maintenance shop and removed for off-site disposal.

Based on interviews with SCL staff, the portion of the penstock within the adit was not sandblasted in 2012, or prior to repainting in 2012, and no record or evidence of sandblasting was observed during the environmental evaluation. The floor of the adit was observed to be free of sandblast grit, indicating that it is unlikely that sandblasting activities were historically conducted on the portion of the penstock within the adit prior to any previous painting events. Additionally, the outer layer of the penstock serves as an encapsulating layer, and the portion of the penstock within the adit is located in an enclosed area and is not exposed to the elements. Therefore, the paint on this portion of the penstock has been protected from weathering and would remain intact.

A very small amount of naturally occurring groundwater infiltration was observed in the walls and ceiling of the adit, which is typical of bedrock tunnels. Intermittent drops of water were observed from two portions of the ceiling. Minor water staining, which is likely related to natural mineral staining from the small trickle of groundwater seepage, was also observed at a few isolated wall areas. A small amount of water was observed on the ground at the entrance to the adit; however, the source was not readily apparent. The minor infiltration of groundwater into the adit does not represent a current or potential future environmental issue.

Considering the lack of chemical or equipment storage within the adit, the minimal paint chipping observed in the penstock piping, the lack of evidence of sandblasting activities, and the BMPs that have been utilized during penstock repainting activities, no potential environmental concerns related to current or historical operations or conditions were observed in the adit. Therefore, further environmental evaluation within or near the openings to the adit is not warranted.

No significant concerns related to the potential demolition and removal of the portion of the penstock within the adit were identified during the environmental evaluation. Also, SoundEarth understands that, if demolition is conducted, a HBMS consistent with standard practices will be conducted by SCL prior to the work to plan for removal, containment, worker safety, and disposal of any identified hazardous building materials in accordance with the City of Seattle's 2023 Standard Specifications, as well as local and federal regulations. SoundEarth understands that SCL will implement all appropriate BMPs during demolition activities and handling and disposal of demolition waste.

5.4 POWERHOUSE

The powerhouse is a wood-framed structure with vertical cedar board siding and a gabled metal roof. The building contains two Pelton impulse turbines with one generating unit (Generator 20). Hydraulic valves are connected to the penstock and are opened for power generation purposes. Water from the penstock flows into two needle valves prior to use in the turbines. A hydraulic governor (located between the two turbines) regulates the flow through each turbine. Hydraulic controls and a hydraulic power unit are located along the southern wall of the powerhouse.

Within the powerhouse, there is also an overhead crane, fire suppression plumbing, electrical wiring and panels, a bathroom, and other office and industrial equipment. An air compressor, reportedly installed in 1969, is located within the southeastern portion of the powerhouse. A backup battery system is located in a closet on the eastern portion of the powerhouse.

One 55-gallon drum of turbine oil and four 5-gallon buckets containing small amounts of used oil are stored on a secondary containment unit in the northern portion of the powerhouse. An oil storage shed is located on the southern exterior of the powerhouse. Two 55-gallon drums containing DTE circulating oil and Tellus Plus oil 32 respectively are stored on a secondary containment device in the shed. Two 30-gallon drums and one 5-gallon container located in the shed appear to be used as satellite collection areas for used oil. Unused hydraulic equipment is stored in a 5-gallon bucket in the shed. No spills or staining were observed within the secondary containment on the floor of the shed. Two propane aboveground storage tanks are stored in a second shed on the southwestern exterior of the powerhouse. During the site visit, SoundEarth reviewed SDSs for chemicals historically used at the powerhouse. Chemicals listed in the SDSs included common cleaning chemicals, sealants, degreasers, and lubricants.

SoundEarth also reviewed maintenance records and interviewed SCL staff regarding historical spills or releases. Maintenance records included several reports of small-scale oil leaks associated with machinery in the powerhouse, including the governor and assorted valves. Maintenance staff indicated that the leaks were primarily captured by secondary containment devices and absorbent pads.

SCL also provided incident reports describing two releases in detail. One release in 2002 involved a leak of approximately three gallons of oil to the powerhouse floor. The floor drains were blocked and absorbent pads placed at the entrance to the tailrace. All oil was contained, and the cleanup debris was disposed of offsite. An additional release in 2004 involved the failure of a hydraulic valve. Oil from the valve leaked to the water beneath the powerhouse. The unit was not operational at the time, and the oil was contained in the tailrace. The oil was collected with absorbent materials and disposed of offsite.

The wooden exterior of the powerhouse is unpainted; according to SCL staff, a wood stain was historically applied to the exterior, but there is no ongoing staining process. As discussed previously, wood staining products are not considered a potential issue of environmental concern. Painted surfaces on the interior of the powerhouse included walls and selected machinery (including the turbine casing). No chipped paint, spills, or other paint-related releases were observed in the powerhouse.

Three transformers are located just outside of the powerhouse. Two of the transformers are labeled as not containing polychlorinated biphenyls (PCBs). The remaining transformer is air cooled and does not contain PCBs.

Water that infiltrates the power tunnel flows through the penstock and beneath the powerhouse to the tailrace located north of the powerhouse. Openings in the floor beneath the two turbines act as floor drains that flow directly into this waterway. A concrete tailrace fish barrier is located approximately 400 feet north of the powerhouse. Water from the penstock historically flowed over the fish barrier when the

powerhouse was operational. At the time of the Property visit, no water was present in the vicinity of the barrier.

While the powerhouse contains equipment that uses various lubricants and several containers of lubricants are stored in the powerhouse, there is no indication of any current or historical widespread release. Intermittent leaks associated with the operation of the powerhouse were reported by SCL; however, all of these leaks were addressed at the time of initial release and were contained within the powerhouse or the tailrace. Therefore, these releases do not constitute an ongoing threat to human health or the environment. No potential environmental concerns associated with the current or historical operations or conditions at the powerhouse were observed during the environmental evaluation, and no historical chemical or petroleum releases to soil or groundwater in the vicinity of the powerhouse have been reported. Therefore, further environmental evaluation in the vicinity of the powerhouse is not warranted.

No significant concerns related to the potential demolition of the powerhouse were identified during the environmental evaluation. Also, SoundEarth understands that, if demolition is conducted, a HBMS consistent with standard practices will be conducted by SCL prior to the work to plan for removal, containment, worker safety, and disposal of any identified hazardous building materials in accordance with the City of Seattle's 2023 Standard Specifications, as well as local and federal regulations. SoundEarth understands that SCL will implement all appropriate BMPs during demolition activities, decommissioning and removal of powerhouse equipment, and handling and disposal of demolition waste.

6.0 CONCLUSIONS

The following is a summary of findings for each of the four operational activity centers.

A few small retail-sized containers of chemicals are stored at the headworks, and no obvious indications of spills or releases associated with these chemicals were observed during the environmental evaluation. In addition, no historical spills or releases have been reported at the headworks by SCL staff. The exterior of the gatehouse is unpainted, and no indications of paint chipping or paint-related spills or releases associated with interior painted surfaces in the gatehouse were observed. Based on these findings, no current or potential future environmental issues were observed at the headworks, and no historical environmental issues have been identified. Therefore, further environmental evaluation of the headworks is not warranted.

Access to the power tunnel was not available at the time of SoundEarth's site visit. However, based upon interviews with SCL staff, previous reports, and photographs provided by SCL, no man-made features or materials have been present within the power tunnel with the exception of existing communication and electrical lines, and there has been minimal access to the power tunnel since its construction. Although a small amount of groundwater infiltration was observed from the rock walls of the power tunnel, the groundwater infiltration is naturally occurring and does not present an environmental risk. Given the lack of chemical or equipment storage, painted surfaces, and activities performed within the power tunnel, no current, historical, or potential future environmental issues associated with the power tunnel have been identified. Therefore, further environmental evaluation of the power tunnel is not warranted.

Based on observations during SoundEarth's site visit and interviews with SCL staff, no chemical or equipment storage has occurred in the adit. The only building materials present in the adit are the penstock, conduit for communication and electrical lines, and a power box. The portion of the penstock within the adit is

located in an enclosed area without exposure to the elements, and the floor of the adit was observed to be generally free of paint chips. No record or evidence of sandblasting of the penstock was observed, and SCL records indicate that appropriate BMPs have been utilized during repainting of the penstock. Although intermittent drops of groundwater infiltration were observed from the walls and ceiling of the adit, the groundwater infiltration is naturally occurring and does not present an environmental risk. Based on these findings, no current, historical, or potential future environmental issues associated with the adit have been identified. Therefore, further environmental evaluation of the adit is not warranted.

Historical leaks of lubricants at the powerhouse were either captured in secondary containment devices or with absorbent materials. There is no record of any spill or release migrating away from the immediate vicinity of the powerhouse or tailrace. As a result, there is no indication that soil or groundwater contamination is present beneath the powerhouse. Furthermore, there is also no indication that any hazardous materials have impacted the soil or groundwater in the vicinity of the powerhouse. The exterior of the powerhouse is unpainted, and no indications of paint chipping or paint-related spills or releases associated with interior painted surfaces in the powerhouse were observed. Based on these findings, no current, historical, or potential future environmental issues associated with the powerhouse have been identified. Therefore, further environmental evaluation of the powerhouse is not warranted.

Based on the findings of the environmental evaluation, no significant concerns related to demolition of the four operational activity centers were identified. Also, SoundEarth understands that, if demolition of any of the operation activity centers is conducted, a HBMS consistent with standard practices will be conducted by SCL prior to the work to plan for removal, containment, worker safety, and disposal of any identified hazardous building materials in accordance with the City of Seattle's 2023 Standard Specifications, as well as local and federal regulations. SoundEarth understands that SCL will implement all appropriate BMPs during demolition activities and handling and disposal of demolition waste.

7.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with SoundEarth's agreement with the client. This report is solely for the use and information of SoundEarth's client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report are derived, in part, from data gathered by others, and from conditions evaluated when services were performed, and are intended only for the client, purposes, locations, time frames, and project parameters indicated. SoundEarth does not warrant and is not responsible for the accuracy or validity of work performed by others, nor from the impacts of changes in environmental standards, practices, or regulations subsequent to performance of services. SoundEarth does not warrant the use of segregated portions of this report.

8.0 REFERENCES

Federal Energy Regulatory Commission (FERC). 1996. *Final Environmental Assessment for Hydropower License, Newhalem Creek Hydroelectric Project, Washington*. November 22.

Golder Associates (Golder). 2013. Letter regarding Newhalem Power Tunnel Survey Assessment – Gen. 20 FERC No. 2705. From David P. Findley and Reda Mikhail. To Sandra Albertsen, Seattle City Light. December 18.

APPENDIX A
PROPERTY PHOTOGRAPHS



PROPERTY PHOTOGRAPHS
Newhalem Creek
Hydroelectric Project Property
Newhalem, Washington



Photograph 1. Diversion dam.



Photograph 2. Gatehouse.



Photograph 3. Control valve located within the gatehouse.



Photograph 4. Lubricants stored in the gatehouse.



Photograph 5. Power tunnel access point.



Photograph 6. Interior of power tunnel access point.



Photograph 7. Representative view of power tunnel interior (from Newhalem Power Tunnel Survey Assessment [Golder 2013]).



Photograph 8. Vertical shaft entry to power tunnel (from Newhalem Power Tunnel Survey Assessment [Golder 2013]).



Photograph 9. Adit.



Photograph 10. Conduit along the ceiling of adit.



Photograph 11. Minor damaged paint on penstock within adit.



Photograph 12. Floor of adit with naturally occurring green rock fragments from adit rock walls.



PROPERTY PHOTOGRAPHS
Newhalem Creek
Hydroelectric Project Property
Newhalem, Washington



Photograph 13. Powerhouse.



Photograph 14. Turbine and generator in powerhouse.



Photograph 15. Hydraulic regulator located on southern portion of powerhouse.



Photograph 16. Air compressor in powerhouse.



Photograph 17. Oil storage area in northern portion of powerhouse.



Photograph 18. Oil storage in shed south of powerhouse.

PROPERTY PHOTOGRAPHS
Newhalem Creek
Hydroelectric Project Property
Newhalem, Washington

Project No.: 1267-030
Date: September 22, 2022
Drawn By: TJZ
Chk By: RKB



Photograph 199. Transformers located west of powerhouse.



Photograph 200. Tailrace fish barrier located north of powerhouse.

Document Content(s)

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