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Seattle City Light

December 12, 2022

KIMBERLY D. BOSE, SECRETARY
FEDERAL ENERGY REGULATORY COMMISSION
888 1ST STREET NE, SUITE 1A
WASHINGTON D.C., 20426

Re: Response to Additional Information Request for the Proposed Surrender and Decommissioning of the Newhalem Creek Hydroelectric Project (P-2705-037)

Dear Ms. Bose,

Seattle City Light (City Light) hereby responds to the Federal Energy Regulatory Commission's (FERC) Additional Information Request (AIR), issued on October 28, 2022, for the proposed license surrender and decommissioning of the Newhalem Creek Hydroelectric Project, FERC Project No. 2705 (Project). The decommissioning of FERC Project No. 2705, including all alternatives, will hereafter be referred to as "Decommissioning Project."

City Light's responses correspond to each numbered request as identified in the AIR. For any of the requests that include cost estimates, the estimates are consistent with the Association for the Advancement of Cost Engineering (AACE) International Class 5 concept level cost opinions and have been prepared with limited information as the Decommissioning Project has not yet reached the design phase. These preliminary estimates are intended to establish rough order of magnitude costs for budget purposes and program labor requirements. Additional work will be needed to refine the cost estimates for the selected alternative as the Decommissioning Project progresses.

1 GRADE CONTROL STRUCTURE

1.1 Technical and design basis

Because of the low risk of rapid or far-reaching headcutting, the installation of a grade control structure in the stream should not be required as a condition of the decommissioning. Instead, City Light recommends that the stream be allowed to naturally adjust to the new base level. Following two study seasons of collecting and analyzing geomorphological stream data, the *Final Newhalem Decommissioning Geomorphology Considerations Report* (Dube 2022), as further described in Section 1.4 below, concludes that there is a low risk of rapid or far-reaching headcutting in Newhalem Creek following diversion dam removal. This is because: 1) the diversion structure is underlain by bedrock that will provide a stable, long-term base level; 2) as accumulated material is transported downstream during peak runoff events, large immobile boulders underlying the channel at several locations upstream from the diversion structure will provide natural grade controls; and 3) the large substrate in Newhalem Creek does and will continue to form an armor layer that is resistant to rapid erosion of the

channel. Due to the coarse nature of the streambed (cobble/boulder/gravel), the re-adjustment to the new base level as accumulated material is transported downstream would likely take place relatively slowly, over a decadal or longer time scale following the initial channel adjustment.

The Washington Department of Fish and Wildlife (WDFW) has requested maintenance of a grade control structure if one is installed, while other intervening Parties (Parties) expressed an interest in a design that anticipates "natural failure" if a grade control structure is installed. However, it would be difficult to differentiate between a desirable natural failure and an undesirable failure triggering maintenance. Rivers and creeks are dynamic in nature, and all structures within a river channel are exposed to risks associated with fluvial processes. The structure may be inundated with sediment, or the stream may bifurcate and flank around it. Boulders comprising the weir could be transported downstream. Consequently, City Light believes that maintaining a grade control structure could disrupt natural stream processes and evolve into long-term stream management, both of which are counter to the intervening Parties' stated interests in restoring natural stream processes.

1.2 Design and Construction

The *Final Newhalem Decommissioning Geomorphology Considerations Report* did not identify a need for a grade control structure, citing rapid or far-reaching headcutting as low risk. Because headcutting is low risk, identifying the design criteria for a protective engineered mitigation is a somewhat arbitrary exercise. Utilizing arbitrary design criteria exposes the possibility of significantly under- or over-specifying the level of intervention required. This translates to a high degree of uncertainty both in the estimates provided, and the likely success of the measure. Over specification leads to unnecessary environmental intervention and damage, while under-specification would likely result in premature failure with unpredictable outcomes.

For instance, selecting the location and elevation of a grade control structure is dependent upon the equilibrium slope of the channel, yet Newhalem Creek's equilibrium slope is anticipated to develop naturally after the initial channel adjustment (see Section 7 below for further details). Placing a grade control structure on the substrate before the channel reaches equilibrium prevents the stream from reaching its natural equilibrium and could lead to costly, overly conservative, or inadequate designs, as well as continued maintenance problems and/or a possible structure failure.

Selecting the size and other physical specifications of the grade control structure without a design basis is also problematic. For instance, the size of the grade control components (e.g., boulders) is determined by the likelihood of a specific hydrologic event mobilizing that particle (e.g., a 25-year storm event); since the *Final Newhalem Decommissioning Geomorphology Considerations Report* assessed headcutting as low-risk, a specific hydrologic event in which to base the size and depth of the grade control is unavailable. Thus, an arbitrary hydrologic event would need to be selected. City Light has concerns with using arbitrary design bases due to the unnecessary costs and additional risk and impacts to the stream.

In the absence of a technically defensible design basis, to respond to the AIR, City Light is estimating costs by selecting design criteria informed by City Light's best understanding of the Parties' stream restoration goals. During a meeting on August 8, 2022 and a follow-up site visit on September 12, 2022,

Parties indicated that if a grade control structure is necessary, there was a preference for a structure that is "designed to fail" so that natural stream processes are ultimately restored. City Light believes a boulder weir best meets these stream restoration goals. A boulder weir is designed to reduce the energy slope along the degradational zone to reduce or prevent the stream from scouring the channel bed. Large angular boulders/rocks from the landslide area could be used and are preferable to round ones because they are more stable than round rocks and could be individually selected to fit together.

To also align with the Parties' stream restoration goals, City Light is assuming the grade control structure would be sited in a location accessible by excavator without expanding the Decommissioning Project footprint. This includes an area up to approximately 100 feet upstream from the existing diversion dam. Any location upstream of this would result in significantly greater environmental impacts due to inaccessibility; specifically, an excavator would require significant clearing of riparian habitat to access the stream from the uplands, or if a helicopter was used to transport equipment and materials, additional noise and tree removal for a safe drop zone would result.

Construction would require a temporary diversion around the work site by constructing a bypass or other type of diversion. A trench and stilling basin would need to be excavated in the stream bed to prepare the bed for installation of a boulder weir. A geotextile fabric may be installed along the upstream face of the trench to prevent seepage and scour under the structure. The trench and boulders would be backfilled with native material following installation.

Estimated costs to construct a grade control with the above assumptions are provided in Table 1 and include a 50 percent management reserve factor to account for the level of uncertainty at this conceptual phase of the Decommissioning Project. Any additions or deviations other than those explicitly stated would result in higher costs. City Light is open to less invasive methods or designs (such as simply placing the boulders on the channel substrate within the Decommissioning Project footprint), but if City Light is responsible for maintaining the structure in the future, the structure must be designed to ensure it does not fail prematurely resulting in environmental liability and additional costs.

City Light notes that intervening in a stream channel's restoration when there is only a low risk of headcutting creates additional risk and potential need for long-term stream management. Installation of a grade control also creates additional environmental impacts, including potential changes in fluvial dynamics, temporary increases in suspended sediments leading to incrementally greater cumulative effects on anadromous and resident fish and aquatic biota, and incrementally higher impacts on terrestrial biota.

1.3 Maintenance

For the reasons provided above, City Light strongly objects to the potential long-term obligation of maintaining a grade control structure and associated stream management. Additionally, maintaining the boulder weir would be inherently difficult because the dam access road would be decommissioned following removal of the diversion dam. Any tools or materials needed for maintenance activities would need to be carried in by hand. Larger maintenance activities or replacement would require construction of temporary access roads or helicopter use. Because of the high costs associated with re-establishing access to the grade control structure site, the cost for Decommissioning Project maintenance included

in Table 1 below assumes full reconstruction of the structure. However, costs could greatly exceed this due to the potential long-term obligation of maintaining a grade control structure and associated stream management.

Table 1. Grade Control Structure Cost Estimate.

Cost Item	Description	Item Total
1	Project Management, Site Identification, Design, and Permitting	$330,000
2	Construction	$750,000
3	Develop Maintenance Plan	$30,000
4	Maintenance	$1,110,000
	Total	$2,220,000

1.4 Availability of Final Geomorphology Report and Continued Engagement with Parties

The NPS stated in its September 27, 2022 response to Scoping Document 1 that boulder and bedrock features had been observed during a site visit that could diminish the impacts of potential headcutting; accordingly, the NPS requested additional investigations. City Light conducted the additional investigations in October 2022 and incorporated the data and analysis into the *Final Newhalem Decommissioning Geomorphology Considerations Report*. These additional investigations assisted in concluding that dam removal will result in a low risk of rapid or far-reaching headcutting in Newhalem Creek following dam removal. The final report also addressed other Parties' comments and concerns regarding upstream and downstream sediment transport following dam removal. City Light will distribute this final report to all intervening Parties for comment within two weeks of this filing and will file it with FERC after comments have been addressed. City Light will continue to engage with the Parties if there are remaining sediment transport concerns following their review of the final report and throughout this proceeding.

2 ACCESS ROAD TO THE DIVERSION DAM

The road providing access to the dam is on land administered by the NPS and is not within the FERC Project Boundary. The road, which continues well beyond the Newhalem Creek Dam, was a former logging road constructed by the U.S. Forest Service (USFS), which administered the land before it was transferred to the NPS in 1968.

Although not constructed by City Light nor within the FERC Project Boundary, City Light believes it is appropriate to decommission the roadway as it is commensurate with City Light's past and proposed level of use. As requested in the AIR, City Light has developed cost estimates for two options to decommission the road above the Emergency Action Plan (EAP) muster location elevation of 840 feet. One estimate is for the removal and restoration of the roadbed, and the other is for the conversion of the road to a trail.

2.1 Removal and Restoration of the Roadbed

The road would be decommissioned from the muster point of the EAP location at elevation 840 feet to the diversion dam, for a distance of approximately 0.7 mile (approximately 3,696 feet). Road

decommissioning work includes removing the existing culverts and reshaping the small, ephemeral, and intermittent drainages to re-establish flow. Then, a "rough and loose" restoration technique would be applied to the compacted roadway surface by scooping soil approximately 2 feet deep with an excavator bucket and placing it back onto the roadway in a nonuniform manner, creating uneven pit and mound topography. Restoration would include planting, seeding, or allowing natural recovery to establish a native plant community.

This estimate does not include the cost associated with establishing temporary access to the diversion dam for removal activities, as that cost is part of the dam removal. Re-establishing vehicle access will require partial rock scaling and clearing of debris from the 2019 landslide to create temporary access to the diversion dam. The exact scale of this effort will require further investigation and evaluation of the roadway. This estimate also does not include removal of the Hilfiker wall that is located below the landslide area. The Hilfiker wall will remain in place because it will be difficult and dangerous to remove since it is in the landslide path and will create a significant amount of disturbance. It will eventually decompose in place so that effects would be gradual. Lastly, a 50 percent management reserve factor has been applied to this estimate to account for the level of uncertainty at this conceptual phase of the Decommissioning Project.

Table 2. Access Road to Dam Decommissioning Estimate.

Cost Item	Description	Item Total
1	Design	$150,000
2	Permitting	$30,000
3	Construction Management	$30,000
4	Roadway Decommissioning	$570,000
5	Restoration	$210,000
-	Total	$990,000

2.2 Conversion of the Roadbed to a Trail

Estimated costs for converting the road to a trail instead of decommissioning the road are provided in Table 3 below and include a 50 percent management reserve factor to account for the level of uncertainty at this conceptual phase of the Decommissioning Project. Converting the roadbed to a trail will require more substantial rock scaling and debris clearing at the landslide location in order to establish long term access. As noted in the geotechnical evaluation prepared by Golder Associates (2021), the visible landslide area that has affected the access road is only a portion of a much larger, older landslide. This landslide is anticipated to continue to move and destabilize parts of the slope uphill of the road/trail alignment, and a high potential exists for continued rockfall and debris slides in the future. The full level of stability work required will likely be dependent on the level of risk allowable for the trail. Slope stabilization work can vary from clearing the road of rock debris and scaling the slope, to constructing an elevated bridge structure across the active debris slide area to avoid impacts from future debris slides. The "Trailway Stabilization" line item below assumes a moderate level of risk for maintaining access across the trail and includes conducting geotechnical investigation and design, clearing the road of rock debris, slope scaling above the road, and using rock debris to construct a

catchment structure at the base of the slope. These catchment structures will require regular maintenance to remove accumulated slide debris and maintain trail functionality; City Light will not be responsible for future maintenance, so maintenance costs are not included. The estimate may decrease if a higher-level risk is deemed acceptable.

Conversion of the existing roadbed to a trail will involve construction techniques similar to the full removal. Allowing for a trail bed would preclude the re-establishment of most natural ephemeral and intermittent drainages, although, where appropriate, some existing culverts could be removed. In the latter instances, armored swales or drain lenses could be used to allow runoff to flow across the trail. The "rough and loose" restoration technique would be used to restore the majority of the roadway to a natural state, but a minimum 36-inch width of the roadway would be preserved to serve as the trail bed. Although City Light will not assume maintenance for a trail left in place, City Light is not in favor of this option due to the risks to pedestrians and high costs of stabilizing a slope that will continue to erode regardless of any measures taken.

Table 3. Access Road to Dam Diversion Estimate.

Cost Item	Description	Item Total
1	Design	$450,000
2	Permitting	$75,000
3	Construction Management	$65,000
4	Road Permanent Stabilization	$735,000
5	Roadway Decommissioning	$570,000
6	Restoration	$180,000
-	Total	$2,075,000

3 RELOCATING ELECTRICAL SERVICE LINES TO THE POWERHOUSE

WDFW recommended that, if the powerhouse is retained, the overhead service lines that provide electricity to the powerhouse be relocated under the Skagit River or across the river on the existing pedestrian bridge to eliminate avian collision/fatalities. Although City Light is not aware of bird collisions or fatalities at this location, in response to the AIR, cost estimates for various options are provided below.

3.1 Relocating the Electrical Lines Under the Skagit River

Theoretically, horizontal directional drilling (HDD) could be used to relocate the existing electrical lines under the Skagit River. Geotechnical studies would need to be conducted to confirm this is a viable alternative. Directional drilling would allow a conduit to be installed underneath the river without having to install a temporary dam or bypass across the river. Once the conduit and new conductors were installed, the overhead lines and power poles on either side of the river could be removed. However, HDD significantly expands the scope and footprint of the Decommissioning Project, and results in inherent risks to the environment and Endangered Species Act (ESA) listed fish, including drilling fluid releases into the river. The potential for these risks should be considered in contrast to

more conventional measures that could minimize the potential for bird strikes, such as bird deterrents. HDD is not included in the Biological Assessment (BA) and would require a major addition to the Proposed Action, requiring additional ESA Section 7 Consultation.

Estimated costs for HDD are provided in Table 4 below. To account for the level of uncertainty at this conceptual phase of the Decommissioning Project, a 50 percent management reserve factor has been applied to this estimate.

Table 4. Directional Drilling Estimate.

Cost Item	Description	Item Total
1	Geotechnical Investigation	$120,000
2	Design/Project Management	$135,000
3	Permitting	$45,000
4	Construction	$1,050,000
5	Restoration	$30,000
	Total	**$1,380,000**

3.2 Electrical Crossing Beneath Existing Pedestrian Bridge

An existing pedestrian bridge crosses the Skagit River and links the town of Newhalem with the Trail of the Cedars. This bridge is approximately 1,150 feet northeast of the existing overhead electrical lines crossing the river to the Newhalem Powerhouse. If this bridge was used to route power to the powerhouse, after crossing the bridge, underground conduit and conductors would need to be installed directly underneath or next to the Trail of the Cedars, which is within a culturally sensitive area. A very high possibility exists for damage to the cedar trees and surrounding vegetation as well as yet undiscovered cultural resources from the trenching operations and construction equipment necessary to install the underground utilities. This alternative had been considered previously but was deemed infeasible because of the high potential for negative impacts to the surrounding forest. Regardless, in response to the AIR, costs are provided in Table 5 below. To account for the level of uncertainty at this conceptual phase of the Decommissioning Project, a 50 percent management reserve factor has been applied to this estimate.

Table 5. Estimated Costs for an Electrical Crossing Beneath the Existing Pedestrian Bridge

Cost Item	Description	Item Total
1	Design/Project Management	$45,000
2	Permitting	$10,000
3	Construction	$580,000
	Total	**$635,000**

3.3 Electrical Service from Transformer near NPS Tender Shack

As an alternative to the pedestrian bridge, with comparable costs, an existing electrical service is near the NPS tender shack by the Newhalem Campground located approximately 2,800 feet west of the powerhouse. Primary electric service could extend from a transformer near this timber shack to a new

transformer at the powerhouse to provide electricity to the powerhouse. The underground conduit and conductors would be installed under the existing access road between the campground site and powerhouse. The new lines would need to be installed in a conduit beneath the existing bridge across Newhalem Creek near the Rock Shelter Trail. An electric handhole would need to be installed along the new conduit every 500 feet. To account for the level of uncertainty at this conceptual phase of the Decommissioning Project, a 50 percent management reserve factor has been applied to this estimate.

Table 6. Extending Electric from the NPS Tender Shack Estimate.

Cost Item	Description	Item Total
1	Design/Project Management	$45,000
2	Permitting	$10,000
3	Construction	$765,000
	Total	**$820,000**

3.4 Changing Existing Service from Three-Phase to Single-Phase

Another alternative to provide electric service to the powerhouse is to change the existing service from three-phase to single-phase. Three service poles on each side of the Skagit River, supporting nine electrical lines and two communication lines, are currently used to provide power to the powerhouse facility from the town of Newhalem. Changing the electrical service at the powerhouse from three-phase to single-phase would allow for two of the three service poles, as well as overhead conductors and conduits associated with each of them, to be removed on each side of the river. The conductors would feed a new, single-phase, pad-mounted transformer, which would replace the existing three-phase stepdown transformers. Existing handholes and conduits from the service poles to the facility could be reused. Electrical work inside the powerhouse would be required.

This option would result in only one pole on each side of the Skagit River with three overhead electric and one communication line crossing over the Skagit River. City Light believes that the resulting appearance could be a single line crossing the river containing both the electric service and communication wire; however, this potential single line concept needs to be verified. To account for the level of uncertainty at this conceptual phase of the Decommissioning Project, a 50 percent management reserve factor has been applied to this estimate.

Table 7. Costs for Changing the Existing Service Electrical Service from Three-phase to Single-phase.

Cost Item	Description	Item Total
1	Design/Project Management	$45,000
2	Permitting	$30,000
3	Construction	$128,000
4	Restoration	$30,000
	Total	**$233,000**

4 DECOMMISSIONING THE ACCESS ROAD TO THE POWERHOUSE

Access to the powerhouse is reached via a section of a former USFS logging road that extends approximately 2,300 feet from the NPS Newhalem Creek Campground to the powerhouse. This road also provides public access to Newhalem Creek and the Rock Shelter Trail from Highway 20 and comprises part of the Linking Trail that connects the Newhalem Creek Campground to the Trail of the Cedars. This road was constructed by the USFS and is not part of the FERC Project Boundary. Historically, equipment and materials were brought to the Project via an overhead trolley crossing the Skagit River from the railway on the opposite side of the river. A log bridge located where the current day pedestrian suspension bridge crosses the Skagit River provided access from Newhalem once the Project was operational.

The section of road from the Rock Shelter Trailhead to the Newhalem powerhouse would no longer be necessary for public or City Light vehicular access if the powerhouse and penstock are removed; accordingly, the NPS has proposed this section for decommissioning. This section of road is compacted gravel approximately 1,300 feet long and 20 feet wide. Although the road was not constructed by City Light and is not within the FERC Project Boundary, City Light agrees that if the powerhouse and penstock are removed, it would be appropriate to decommission this 1,300-foot section of roadway as it is commensurate with City Light's past and proposed level of use. Associated costs are in Table 8 below. To account for the level of uncertainty at this conceptual phase of the Decommissioning Project, a 50 percent management reserve factor has been applied to this estimate.

Table 8. Access Road to Powerhouse Decommissioning Estimate.

Cost Item	Description	Item Total
1	Design/Project Management	$50,000
2	Permitting	$20,000
3	Roadway Decommissioning	$140,000
4	Restoration	$110,000
	Total	**$320,000**

5 EMERGENCY ACTION PLAN ROUTES

The evacuation trail that leads to the penstock tunnel (adit) will not be affected by either the partial removal or full removal alternatives. City Light plans to continue current practices to maintain the trail as a pedestrian evacuation path from the town of Newhalem up to the safe muster location at the adit as part of the Skagit River Hydroelectric Project (FERC Project No. 553) The elevation of the pedestrian muster location is 745 feet, which allows sufficient space for evacuees to congregate above the elevation of the maximum flood wave from a Potential Failure Mode scenario of Ross Dam. The 840-foot elevation at the EAP muster site along the road accessing the Newhalem Creek diversion dam is also higher than the maximum inundation elevation along that route to allow ample space for a significant number of cars to park safely out of the inundation zone.

The requested drawings from the Skagit and Newhalem Public Safety Plan are included with this filing as Controlled Unclassified Information/Critical Energy/Electric Infrastructure Information (CUI/CEII)

materials. These requested materials include drawings: C-7200, C-7201, C-7202, and C-7208. City Light has also included a marked version of C-7208 and a marked version of additional drawing C-7210 to show the trail and muster elevations, along with a map showing both evacuation routes with muster locations labeled and the inundation elevation line for reference.

6 EXHIBIT D COSTS

The AIR requests 1) a cost estimate and breakdown of costs for Alternative B (full removal), and 2) a breakdown of costs for the total cost provided in the Surrender Application for Alternative C (partial removal). These costs are provided in the sections below, although breaking down the costs by Decommissioning Project components does not result in accurate accounting because each Decommissioning Project component is affected by other activities in the overall scope. For example, the diversion dam pedestrian bridge would be removed concurrently with the dam removal, so the price does not necessarily reflect the costs of removing the bridge separately. Project management, design, and engineering costs have been applied to each of the Decommissioning Project components as a percentage of the total, in addition to permitting, construction, construction management, restoration, project closeout, and sales tax. To account for the amount of uncertainty at this stage in the Decommissioning Project, a 50 percent management reserve factor has been applied to each activity.

The estimated costs in the tables below are based on the descriptions provided in Exhibit E of the Surrender Application unless otherwise indicated; thus, costs do not include installation of a grade control structure, conversion of the diversion dam access road to a trail, use of helicopters, or removal of the Hilfiker retaining wall. The tables below represent City Light's best estimate of the costs associated with each major retention/removal activity, although the overall cost of the Decommissioning Project will depend on the specific scope of the decommissioning work.

6.1 Costs for Partial Removal

The estimate provided in the Surrender Application for Alternative C (partial removal) was $5.2 million. This preliminary estimate came from a cost benefit analysis that assisted City Light in the decision to either surrender the license or relicense the Project and continue with hydroelectric operations. Since submitting the Surrender Application and coordinating with the intervening Parties, City Light has applied more detail to the project scope. Accordingly, City Light is amending the cost estimate for Alternative C to approximately $12.6 million, including a 50 percent management reserve, which is appropriate for the conceptual phase of the Decommissioning Project. This new number also reflects the estimated level of effort to participate in FERC's Surrender of License proceeding. Estimated costs are broken down in Table 9 below.

Table 9. Alternative C – Partial Removal Decommissioning Estimate.

Cost Item	Description	Item Total
1	Diversion dam removal	$4,110,000
2	Intake/headwork structure removal	$2,940,000
3	Diversion dam pedestrian bridge removal	$780,000
4	Diversion dam access road decommissioning	$2,230,000
5	Tailrace removal	$780,000
6	Fish barrier removal	$1,370,000
7	De-energizing powerhouse	$390,000
	Total	$12,600,000

6.2 Cost for Full Removal

Many of the Decommissioning Project components in Alternative C (partial removal) would also apply to Alternative B (full removal). However, Alternative B would include additional work associated with removing the powerhouse, penstock, penstock saddles, and transmission poles on either side of the Skagit River as well as decommissioning the powerhouse access road. The conceptual cost estimate for Alternative B (full removal) is estimated at $15.9 million. The estimated costs are broken down in Table 10 below according to major Decommissioning Project components.

Table 10. Alternative B – Full Removal Decommissioning Estimate.

Cost Item	Description	Item Total
1	Diversion dam removal	$3,780,000
2	Intake/headwork structure removal	$2,700,000
3	Diversion dam pedestrian bridge removal	$720,000
4	Diversion dam access road decommissioning	$2,055,000
5	Penstock removal	$2,880,000
6	Powerhouse removal	$900,000
7	Powerhouse access road decommissioning	$505,000
8	Tailrace removal	$720,000
9	Fish barrier removal	$1,260,000
10	Transmission line removal	$360,000
	Total	$15,880,000

7 NEWHALEM CREEK GRADE ADJUSTMENT

Anticipated changes to the streambed upstream from the diversion structure are described in detail in Section 4.1.1 of the forthcoming *Final Newhalem Decommissioning Geomorphology Considerations Report* (Dube 2022) and summarized here.

Removal of the diversion structure will result in adjustment of the bed of Newhalem Creek to the new base level. An approximate 1920 longitudinal profile that was computed from 1920 topographic drawings and a 2022 longitudinal profile upstream from the diversion structure were plotted to compare approximate pre-Project and current stream profiles (Figure 1). There is uncertainty in horizontal location and vertical datum on the 1920 map, so the 1920 stream profile is shown as a wide band and should be considered approximate. The location of large, immobile (5- to 12-foot diameter) boulders from a 2022 field inventory were also plotted. These data were used to estimate the potential amount of channel downcutting that could take place following removal of the diversion structure.

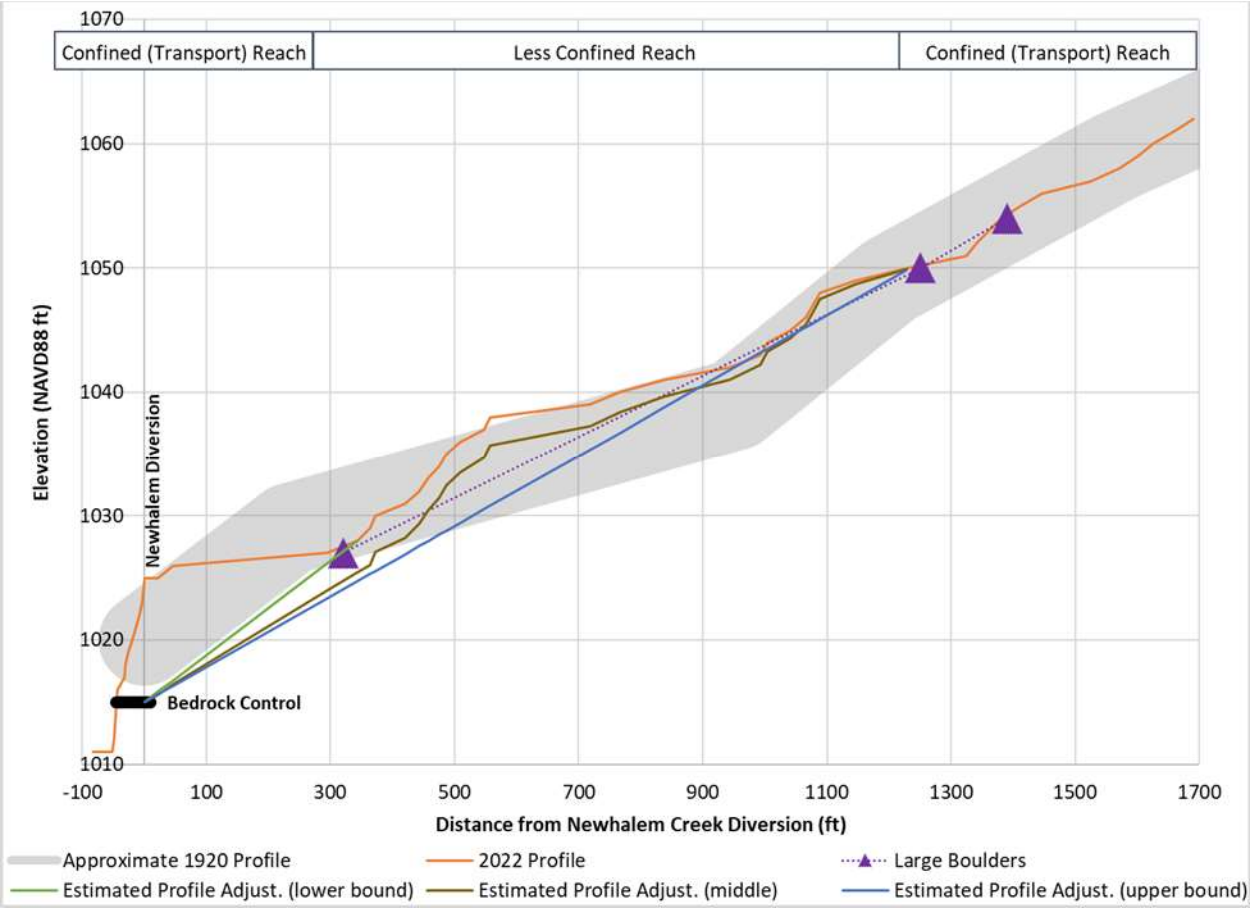

Figure 1. Longitudinal Profile of Newhalem Creek Upstream from Diversion Structure with Potential Profile Adjustments.

The 2022 stream profile includes several "steps," in the 1,200-foot reach just upstream from the diversion/intake pool. A major step is located approximately 550 feet upstream from the diversion and is likely controlled by the large boulders located 320 feet upstream of the dam (Station 320). This step is visible in the field as a steep cobble/boulder riffle located at the downstream end of a split high flow channel/island area. At this location, several very large (10- to 12-foot diameter) boulders were observed under the existing channel. These large boulders appear to have originated from an ancient, large landslide on the western bank of the river and are not mobile, providing a stable grade control at this location. Two additional sets of large channel-spanning boulders were mapped at 1,251 and 1,390 feet upstream from the diversion. These were also at the toe of a landslide deposit. Steps were

also apparent in the 1920 stream profile, suggesting that this type of stepped profile is a naturallyoccurring feature of the Newhalem Creek channel in this location.

Three bounding estimates of the amount of potential channel lowering shown in Figure 1 were made based on the following assumptions:

- Lower bounding estimate: Assumes the 8- to 12-foot diameter boulders 320 feet upstream from the existing diversion will be a grade control; the channel downstream from this location would lower to the green line in Figure 1. This would correspond with a total volume of approximately 4,400 cubic yards of sediment being transported downstream.
- Middle bounding estimate: Assumes Newhalem Creek erodes into the right bank at the location of the 8- to 12-foot diameter boulders (320 feet upstream from the existing diversion) and there are smaller boulders in the new channel location that allow some downcutting at this location. The stream continues to adjust the profile, but instead of a straight line (like the upper bounding estimate described below), the stream adjusts to a new profile with a similar shape as the existing profile. The brown line in Figure 1 shows a hypothetical new profile using these assumptions. This would correspond with a total volume of approximately 9,000 cubic yards of sediment being transported downstream
- Upper bounding estimate: Assumes the stream erodes toward the right bank and around the boulders at Station 320, there are no boulders in the right bank to form a grade control and the stream continues to adjust upstream to the location of the 5-foot angular boulders distributed across the stream 1,251 feet upstream from the diversion. In this scenario, the stream adjusts to a straight-line profile from the bedrock under the diversion structure to the boulders at station 1,251.. This scenario also assumes these boulders will be a grade control, and the stream would lower to the profile shown as the blue line in Figure 1. This would correspond with a total volume of approximately 12,900 cubic yards of sediment being transported downstream.

Change in channel bed elevation was determined by subtracting the 2022 bed elevation from the estimated lower, middle, and upper bounding profile lines. Bed lowering would be greatest just upstream from the removed diversion and at the top of the “steps” in the 2022 profile, with a maximum of 10 feet of bed lowering at the diversion structure (since that is the height of the dam) as shown on Figure 2. The estimated bed lowering would extend upstream, at varying depths, from the diversion dam for either 320 feet (lower estimate, green line in Figure 2) or 1,251 feet (middle and higher estimate, brown dotted and blue dashed lines, respectively in Figure 2).

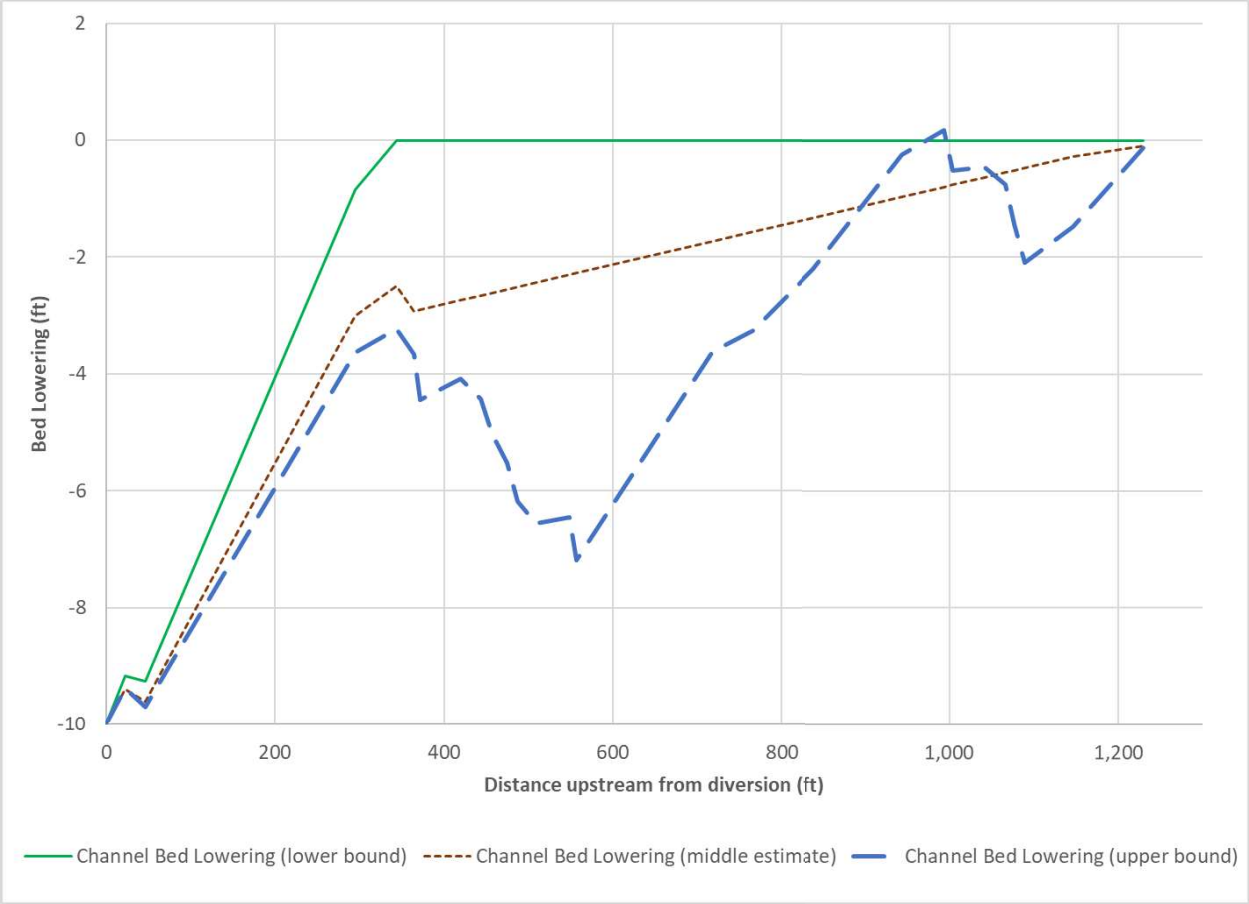

Figure 2.Estimated Amount of Bed Lowering Upstream from Diversion Structure with Potential Profile Adjustments.

In the short-term, immediately following diversion dam removal, the local stream gradient just upstream of the diversion would increase the sediment transport frequency. However, as the bed adjustment progresses upstream, the local gradient increase would become less until a new long-term bed profile is reached. As the local gradient increase becomes less, the corresponding energy to move particles becomes less, resulting in less frequent bedload movement and a slowing of the process. Channel bed adjustments can migrate upstream rapidly in fine-grained sediments, but the large particle sizes in Newhalem Creek will form an armor layer and further reduce the speed of channel adjustment. Additionally, the large, immobile boulders noted above will limit channel incision and channel adjustment progression. It is anticipated that as an armor layer forms, the larger substrate will be mobile much less frequently, and channel adjustments will take several decades. Over time, a new equilibrium channel gradient will develop.

8 GEOLOGY AND SOIL REFERENCES

In the AIR, FERC staff requested two reference documents that did not appear to be publicly available. The two requested documents are included as an attachment to this filing. The two attachments include (1) *Newhalem Dam Decommissioning Geomorphology Considerations, Draft Report* (Dube 2021), filed with FERC previously on September 28, 2022 in response to Scoping Document 1, and (2) *Summary of Field Observations and Proposed Additional Investigations of Newhalem Access Road Debris Slide* (Golder 2021). As noted above, the draft geomorphology report will be superseded by the *Final Newhalem*

Decommissioning Geomorphology Considerations Report (Dube 2022), which will be distributed to intervening Parties for their review within two weeks of this filing. After addressing any comments, the final report will be filed with FERC.

9 SOIL SAMPLING

9.1 (1) The three sampling programs conducted in 2014–2016 and (2) the EECA Risk Assessment and any pertinent information about the sampling program on which it is based.

Three sample collection events have occurred at the penstock: (1) July 2014, (2) October 2015, and (3) October 2018. Soil was removed in 2016 and 2017. The following documents, which summarize the sampling efforts and their findings, are provided as attachments to this filing:

1) *Seattle City Light Newhalem Penstock Soil Sampling/XRF Survey*, Hart Crowser, September 2014 (reports sampling completed in July 2014)
2) *Memorandum – Site Visit and Limited Environmental Investigation Summary Report*, Floyd Snider, January 2016 (reports sampling completed before the Time Critical Removal Action [TCRA], in October 2015)
3) *Draft Engineering Evaluation/Cost Analysis* (EE/CA), Floyd Snider, August 2022; includes EE/CA Appendix B: Data Memorandum—Fall 2018 Newhalem Penstock Environmental Investigation Activities Summary (reports sampling completed after the TCRA, in October 2018)

The penstock Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) site, which includes the penstock and area of associated environmental impacts, has been characterized through the referenced investigations and fully analyzed by risk assessments and other requirements included in the EE/CA. The EE/CA was prepared for NPS, the lead federal authority for CERCLA projects on NPS-managed land, and has been reviewed and approved by the North Cascades National Park Service Complex (NOCA) and ratified by the NPS Environmental Compliance and Cleanup Division (ECCD). The document and its analyses were prepared in accordance with NPS EE/CA guidance; CERCLA Section 104(b) and the National Oil and Hazardous Substances Pollution Contingency Plan 40 Code of Federal Regulations (CFR) Section 300.415(b)(4)(i); the U.S. Environmental Protection Agency (USEPA) Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA; and the U.S. Department of the Interior (USDOI) Environmental Compliance Memorandum 10-1.

NPS has several requirements and policies that must be satisfied when undertaking a response to the release of hazardous substances, pollutants, or contaminants on NPS-managed land, including the NPS Organic Act of 1916 (Organic Act; 54 U.S. Code Sections 100101 et seq.; 36 CFR Chapter 1, Part 1), which requires that NPS manage parks to conserve the scenery, natural and historic objects, and wildlife as well as provide for their enjoyment by such means as will leave them unimpaired for the enjoyment of future generations.

The EE/CA is the basis for selecting what is intended to be a final, permanent response action to address human health risk, ecological risk, and all applicable and relevant regulations at the site. Consequently, in accordance with NPS policy, the penstock EE/CA includes a site-specific baseline

human health risk assessment and an ecological risk assessment, including both a screening-level ecological risk assessment and baseline ecological risk assessment (BERA). Based on the results of the risk assessment and the comparative analysis evaluation criteria, the BERA recommended the No Action alternative. The No Action alternative would effectively protect human health and the environment over the short and long term; would protect and preserve the NOCA natural resources, conditions, and values over the long term; and would enable park managers to manage the park in such a manner as to achieve the purposes for which the park was established.[1]

Now that it has been approved and ratified by NOCA and the NPS ECCD, the pre-final draft EE/CA and associated Administrative Record will be made available by NPS for an upcoming 30-day public comment. Following receipt and evaluation of public comments, NPS will finalize and sign the EE/CA and will issue an Action Memorandum. The Action Memorandum will identify and provide the rationale for the selected alternative, and will address significant comments received from the public, including those received from other jurisdictions.

9.2 (3) Any other known contaminants in the project area (including the 2020 and 2021 analyses, and the draft document referred to in comment #23) and/or the intermittent stream near the penstock.

City Light is unaware of other contaminants in the Decommissioning Project area. The 2020 and 2021 analyses referenced in Comment #23 described the risk assessments that are a component of the EE/CA as described in Section 9.1 above. The draft document referenced in Comment #23 is the EE/CA described in Section 9.1 above. The EE/CA is included as an attachment to this filing. Although it is titled as a draft document, the EE/CA has been approved and ratified by NOCA and the NPS ECCD, and will become final after the upcoming 30-day public comment period.

9.3 (4) Details including the schedule for the penstock-tunnel sampling program addressed in your response to comment #18.

City Light has begun the Site Evaluation that includes evaluating materials in the penstock tunnel (adit) and other operational activity centers within the Project footprint for potential toxicological effects. Once completed, the report will be provided to the NPS and filed with FERC. The report is anticipated to be completed and provided to the NPS within the first quarter of 2023.

10 BIOLOGICAL ASSESSMENT REVISION

The Newhalem Creek Hydroelectric Project Decommissioning Biological Assessment and Essential Fish Habitat Assessment (BA) has been updated to include the effects of full removal of Decommissioning Project facilities on federally-listed species and is included as an attachment to this filing.

11 MONARCH BUTTERFLY

The BA has been updated to include an assessment of potential effects of the proposed action on monarch butterfly and North American wolverine, including an assessment of potential for these

[1] North Cascades National Park Service Complex Natural Resource Condition Assessment. Publication No. NPS/NOCA/NRR—2015/901. National Resource Stewardship and Science. January 2015.

species to occur in the Decommissioning Project area. The updated BA is included as an attachment to this filing.

12 TRAIL USE DATA

Trail use data is not available for the Newhalem Creek Trail; City Light is not aware of trail use data for any trails in the vicinity except for the Trail of the Cedars. Trail use data for the Trail of the Cedars was provided in City Light's response to Scoping Document 1, which was filed with FERC on September 28, 2022, in the section entitled "Recreation and Land Use." Recently updated, calibrated, trail count data for the Trail of the Cedars is found in Appendix A Table A-1. Regarding the use of the Newhalem Creek Trail and accessing the waterfall, please refer to pages 3 through 5 of City Light's Response to Comments on Scoping Document 1 that was filed with FERC on November 4, 2022. Other than trail count data for the Trail of the Cedars, the only other recreational data City Light has available in the recreational corridor is 2022 campsite usage at Newhalem Creek Campground, which is found in Table 11 below.

Table 11. 2022 Overnight Stay Data for Newhalem Creek Campground through October 2022.

Overnight Stay Data	Stays[a]
Tent O/N Stays at Newhalem Creek CG	19,613
RV O/N Stays at Newhalem Creek CG	10,948

[a] https://irma.nps.gov/STATS/Reports/Park/ROLA

Notes: CG = Campground; O/N = overnight; RV = recreational vehicle

13 CULTURAL RESOURCES

City Light has identified the Washington Department of Archaeology and Historic Preservation (DAHP), NPS, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, and Upper Skagit Indian Tribe as Section 106 consulting parties. City Light solicited input from each in advance of filing the Surrender Application with FERC and will continue to consult with them as part of Section 106 of the National Historic Preservation Act compliance.

13.1 Determination of the Project Area of Potential Effects

Letters were sent to all Section 106 consulting parties on August 11, 2022, requesting concurrence with a proposed Area of Potential Effect (APE) for Decommissioning Project activities. The DAHP concurred with the proposed APE on August 12, 2022. No comments on the APE were received from other Section 106 consulting parties. The APE letters that were distributed to all consulting parties, along with the concurring letter from DAHP, will be filed as "privileged" concurrent with this filing.

13.2 Completion of Archaeological Surveys

The APE was designed to include areas directly affected by removal of infrastructure as well as a buffer around the Project Boundary to accommodate any visual, auditory, or atmospheric effects that may occur from the Decommissioning Project (see the attached APE consultation letter and map). The archaeological survey for the Section 106 compliance identification effort will not include the entire APE but will include areas that will be directly affected by the Decommissioning Project through ground

disturbance which is dependent on the alternative and the means and methods for decommissioning. In addition, City Light will consider conducting an archaeological survey of the portion of the terrace that extends from the creek east to the penstock as potential mitigation for effects to the TCP if the powerhouse and penstock are retained under Alternative C. With consulting parties, City Light will develop an archaeological field study plan once the preferred alternative is confirmed through the National Environmental Policy Act (NEPA) process. The field study plan will be submitted to FERC prior to scheduling fieldwork, likely in late spring 2023, after the draft NEPA Environmental Assessment (EA) is issued by FERC. City Light intends to hire a consultant to conduct one archaeological survey of the entire field study area that is developed through consultation. Due to the landslide along the dam access road and unsafe conditions during winter, the archaeological survey will not be completed until summer 2023, when the headworks are accessible. A Section 106 archaeology report detailing findings of the survey will be submitted after fieldwork is completed, likely by the end of 2023; however, this schedule is dependent upon the confirmation of an alternative and the corresponding pace of Section 106 consultation.

13.3 Historic Structures

The National Register of Historic Places nomination update, which is being conducted under the current Skagit River Hydroelectric Project license (Skagit Project, FERC No. 553), has required additional research triggered by concurrent Skagit Project relicensing and Decommissioning Project decommissioning, so the completion date for that document has been pushed into 2023. The draft document will be provided to the Upper Skagit Indian Tribe, as the Tribe has requested, for comment prior to being finalized.

As part of the Section 106 process for this Decommissioning Project, City Light hired a consultant that meets the Secretary of the Interior's Professional Qualification Standards in Architectural History and History to record all historic buildings and structures within the Decommissioning Project area on Washington State Historic Property Inventory forms and to complete an evaluation of Decommissioning Project effects on historic properties, for both Alternative B and Alternative C. The consultant completed fieldwork on September 26, 2022. The proposed schedule for completion of the built environment deliverables is:

- December 9, 2022: Draft Historic Property Inventory Forms submitted to consulting parties
- December 19, 2022:Draft Section 106 built environment report submitted to City Light
- December 23, 2022:Draft Section 106 built environment report submitted to FERC, DAHP, and consulting parties
- January 23, 2023: Deadline for comments from consulting parties
- February 23, 2023: Anticipated final Section 106 built environment report submitted to FERC and consulting parties

13.4 Traditional Cultural Properties

The Upper Skagit Indian Tribe will prepare a summary of its Traditional Cultural Property (TCP) 45WH450. The summary will be filed as "privileged" in a separate filing to FERC by the Upper Skagit Indian Tribe. We understand that the USIT will try to file their summary within the 45-day timeframe of this AIR. As with all other historic properties, evaluations of Decommissioning Project effects to the TCP

are part of the ongoing Section 106 process, which will be accomplished through continuing consultation with the Upper Skagit Indian Tribe.

Affected Tribes were initially consulted during the preparation of the Surrender Application. Since then, City Light has consulted with Tribes regarding the APE on August 11, 2022. Recently, City Light staff communicated with the Upper Skagit Indian Tribe to summarize its TCP in response to this AIR. The anticipated next steps in formal Tribal consultation include soliciting comments on the Section 106 built environment report and coordinating with the Tribes to develop the field study plan for the archaeological survey.

13.5 Historic Resources Management and Mitigation Plan

Although City Light had proposed a Historic Resources Management and Mitigation Plan in the Surrender Application, City Light now believes a Cultural Resources Mitigation and Management Plan (CRMMP) is more appropriate considering Tribal and archaeological resources; therefore, City Light will be referring to a CRMMP in in the future. This document will be developed with consulting parties later in the decommissioning process because it is dependent on as yet unknown outcomes from Section 106 consultation, such as identification of historic properties, determination of adverse effects, and mitigation developed through consultation. In response to the AIR, the CRMMP will be developed after the issuance of the draft NEPA document after the preferred alternative is confirmed, as this is critical to understanding Decommissioning Project effects and resulting mitigation.

14 MANAGEMENT PLANS

The AIR requests that City Light identify the types of measures and best management practices (BMPs) anticipated to be included in the proposed Restoration Plan, Invasive Species Management Plan, Road Decommissioning Plan, Spill Plan, Sediment and Erosion Control Plan, Historic Resources Mitigation and Management Plan, Stormwater Pollution and Prevention Control Plan, Temporary Erosion and Sedimentation Control Plan, Spill Prevention and Response Plan, Spill Prevention Containment and Control Plan, and any other resource-specific management plans to be developed. Commission staff requests this information in order to incorporate the anticipated benefits of the measures and BMPs included in these plans in FERC's analysis of Decommissioning Project effects.

At this time, there are too many uncertainties and unknowns to prepare meaningful management plans. Plans will be prepared and finalized after a decommissioning alternative is confirmed, consultation with NPS and other intervenors has occurred, and construction contracts have been awarded. This AIR response clarifies what plans City Light anticipates at this time, provides concept-level cost estimates for developing and implementing the plans assuming both decommissioning Alternatives B (full removal) and C (partial removal), and outlines the types of measures and BMPs anticipated to be included in the plans when they are developed. The list of measures and BMPs is offered to assist FERC in understanding the future plan elements that likely would drive level of effort and cost.

At this time, City Light anticipates developing the following plans to support Decommissioning Project decommissioning activities:

- *Road Decommissioning Plan*, as discussed in the Surrender Application filed January 28, 2022: Exhibit C Table C-1; Exhibit E Table E-3; and Appendix C – Response to Comments 5, 10, 16, 29, 39, 71; and Decommissioning Plan filed January 28, 2022: Section 3.3 and Tables 2 and 3.
- *InvasivePlant Management Plan*, previously referred to as "Invasive Species Management Plan" as discussed in the Surrender Application filed January 28, 2022: Exhibit C Table C-1; Exhibit E Table E-3; and Appendix C – Response to Comments 2 and 94; and Decommissioning Plan filed January 28, 2022: Tables 2 and 3. The "Invasive Weed Management Plan" mentioned in the Application for Surrender Appendix C Response to Comment 28 is in reference to this *Invasive Plant Management Plan*.
- *Sediment and Erosion Control Plan*, as discussed in the Surrender Application filed January 28, 2022: Exhibit C Table C-1; Exhibit E Table E-3; and Appendix C – Response to Comments 11, 28, 48, 81; and Decommissioning Plan filed January 28, 2022: Tables 2 and 3. The BA Section 2.7.1 has been revised to refer to the *Sediment and Erosion Control Plan* rather than "Temporary Erosion and Sedimentation Control Plan" and "Stormwater Pollution and Prevention Control Plan."
- *Restoration Plan*, as discussed in the Surrender Application filed January 28, 2022: Exhibit C Table C-1; Exhibit E Table E-3; and Appendix C – Response to Comments 1, 28, 37, 38, 45, 47, 49, 70, 78, 81, 82; and Decommissioning Plan filed January 28, 2022: Tables 2 and 3.
- *Cultural Resources Mitigation and Management Plan (CRMMP)*, previously referred to as the Historic Resources Management and Mitigation Plan, as discussed in the Surrender Application filed January 28, 2022: Exhibit C Table C-1; Appendix C – Response to Comment 52; and Decommissioning Plan filed January 28, 2022: Table 3.
- *Spill Plan*, as discussed in the Surrender Application filed January 28, 2022: Exhibit E Table E-3; Appendix C – Response to Comments 48, 81; and Decommissioning Plan filed January 28, 2022: Table 2. The BA Sections 2.7.1 and 6.6.1 have been revised to refer to the *Spill Plan* rather than "Spill Prevention and Response Plan" and "Spill Prevention, Containment, and Control Plan."

The concept-level estimated costs to develop and implement these plans for Alternatives B and C are provided in Section 14.1. Section 14.1 also provides a summary of BMPs related to these plans, as well as other related avoidance and mitigation measures that were proposed in the Surrender Application, BA, and other materials filed with FERC. As planning for decommissioning progresses, it may become evident that additional resource-specific management plans are appropriate or required to address decommissioning impacts, or that one or several of these plans would be best combined. City Light will develop such plans and related BMPs as appropriate. Also, necessary permits acquired closer to the time of construction activities may include BMPs that are not yet identified.

14.1 Anticipated Decommissioning Management and Resource Plans

14.1.1 Road Decommissioning Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $45,000 to develop and implement the *Road Decommissioning Plan for Alternative B and* $52,500 for Alternative C.

The Road Decommissioning Plan would include an overview of the decommissioning activities involved with removal of the diversion dam access road. This includes a summary of City Light's interactions and any agreements made with the landowner (NPS), a preliminary schedule for the work, the permits that will be necessary for the work, the construction methods proposed for the work, any specific fire prevention or vegetation/weed control measures required during construction, and a cost estimate for the work.

Preliminary List of Measures and Best Management Practices

A Road Decommissioning Plan would be developed based on USFS and/or Washington Department of Natural Resources guidelines and in coordination with the NPS, of which BMPs may include:

- Limiting equipment and vehicle use to daylight hours.
- Setting any necessary trail closures in coordination with NPS.
- Providing signage for the public about construction activities and closures.
- Timing work seasonally to reduce noise impacts on wildlife and recreation as feasible.
- Avoiding removal of suitable nesting habitat for spotted owls and murrelets.
- Conducting an archaeological subsurface survey of any areas proposed for ground disturbance, and an archaeologist to monitor ground disturbing activities in areas that are not accessible for subsurface archaeological investigation.
- Removing the approximately eight existing culverts and restoring natural drainages.
- Scarifying the road surface.
- Conducting natural regeneration and/or replanting.
- Controlling invasive species for 3 years as needed.
- Monitoring the performance of any restoration plantings and weed treatments.

14.1.2 Invasive Plant Management Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $576,500 to develop and implement the Invasive Plant Management Plan for Alternative B and $437,000 for Alternative C.

The Invasive Plant Management Plan will include measures for monitoring and maintaining non-native and invasive plant species identified by the NPS and on current noxious weed list for Whatcom County. Maintenance would use an integrated pest management approach combining cultural, chemical, and mechanical methods for removing and managing invasive plants. Monitoring would include preparing an annual monitoring report documenting completed maintenance, identifying future maintenance needs, and providing digital images of restoration areas.

The primary difference in costs between the two alternatives is related to the size of the treated area, which is approximately 1 acre higher for the full removal alternative, and will require proportionally more labor to monitor and maintain annually. Annual monitoring and maintenance will be conducted for 5 years. Costs do not include the application of mulch.

Preliminary List of Measures and Best Management Practices

The Invasive Plant Management Plan would be developed in coordination with the NPS. In addition to the description in the paragraph above, the plan may include:

- Inspecting construction equipment.
- Washing and treating equipment prior to arriving at the construction site to remove seeds, plants, and plant fragments. Using a high-pressure washing system is recommended to remove all seeds, plants, plant fragments, dirt, and debris from construction equipment, taking care to wash the sides, tops, and undercarriages of equipment before accessing in-stream work areas to remove vegetation and dirt clods that may contain noxious weed seeds.
- Surveying the construction area for invasive botanical species prior to and after construction as appropriate.
- Controlling weeds prior to construction start.
- Implementing other measures and practices as appropriate to reduce the establishment of invasive plant species during construction.

14.1.3 Sediment and Erosion Control Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $652,500 to develop and implement a Sediment and Erosion Control Plan for Alternative B and $517,500 for Alternative C.

The Sediment and Erosion Control Plan will include a summary of construction BMPs; typical detail drawings identified in the Washington State Department of Ecology's most current *Stormwater Management Manual for Western Washington* for project elements; and limits of construction for Decommissioning Project elements. This cost estimate includes a narrative and the costs of preparing conceptual and typical drawings. Only temporary measures (those BMPs applied during construction) are estimated.

Preliminary List of Measures and Best Management Practices

The Sediment and Erosion Control Plan and related BMPs likely will include these elements:

- Prior to work within or adjacent to Newhalem Creek, including the establishment of temporary spoils disposal areas and staging areas, access road improvements, and landslide boulder and debris removal, the selected contractor will install sedimentation and erosion control measures. These may include the use of silt fencing, certified noxious weed-free straw bales, plastic sheeting on erodible soils, jute matting, or mulch along the road embankments or streambanks to prevent sediments from entering waterways. Use of these BMPs should prevent construction stormwater from entering waters of the U.S.
- Clearing limits will be identified on all design drawings and will be fenced prior to initiation of staging or demolition activities. The fence will clearly define the clearing limits and will protect non-Decommissioning Project areas from vehicle intrusion or debris disposal.
- Because the Proposed Action is likely to affect more than 1 acre of land, particularly if access road improvements are required, the contractor will implement a grading plan prior to site preparation to ensure that ground disturbing effects are minimized. During clearing, grading,

and construction activities, all exposed areas at final grade will be protected from erosion using weed-free straw mulch, coir fabric, plastic covering, or similar method.
- Disturbance of riparian vegetation will be limited to the minimum amount necessary to achieve construction objectives to minimize habitat alteration and limit the effects of erosion and sedimentation.
- City Light will require that the selected contractor minimize vegetation clearing along riparian areas. City Light will work with the NPS to develop any additional BMPs to minimize sedimentation.
- City Light will ensure compliance with any conditions included in the Section 401 Water Quality Certification and Section 404 permit for in-water work.
- The contractor will be required to adhere to BMPs prescribed in Washington State Department of Ecology's most current *Stormwater Management Manual for Western Washington*.
- City Light will ensure compliance with any measures included in the Biological Opinion and Incidental Take Statement for Listed Species.
- To contain flyrock, City Light will require the selected contractor to use blast mats to cover any explosives used for boulder fracturing during access road repairs/improvements.

If Alternative B is implemented, the following additional measures will be applied:
- City Light will attempt to access the penstock and saddles using the existing disturbed corridor adjacent to the penstock (i.e., area devoid of trees).
- If removal of the penstock or saddles requires access via areas outside the existing disturbed corridor and a temporary route is needed, vegetation clearing (including tree removal) would be kept to the minimum necessary to provide access to equipment.

14.1.4 Restoration Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $1,285,000 to develop and implement the Restoration Plan for Alternative B and $832,809 for Alternative C.

Restoration includes planting, seeding, and 5 years of monitoring and maintenance. Quantitative performance standards would be developed in coordination with the NPS and success and maintenance or contingency measures will be evaluated and identified in annual monitoring reports, as appropriate. Annual monitoring reports will compare observed conditions with identified performance standards for each area, recommended maintenance measures, and digital photographs from permanent monitoring points. Costs assume a 10 percent attrition rate with associated supplemental plantings. Costs do not include leaving a trail on the access road to the diversion dam, directional drilling to install electrical lines beneath the Skagit River, or installing a grade control structure in Newhalem Creek.

Preliminary List of Measures and Best Management Practices

A Restoration Plan would be developed in coordination with the NPS for areas temporarily disturbed by decommissioning activities. In addition to the description in the paragraph above, the plan may include:

- Identifying areas for regrading and replanting with native species and areas suitable for natural recovery.

- Revegetating temporarily disturbed areas adjoining the creek and tailrace barrier location with appropriate plant species, and replacing any mature trees removed at a ratio determined by City Light and NPS.
- Coordinating with NPS to tailor a mix of appropriate native plant species for each restoration area.
- Recontouring the southern bank of the Newhalem Creek channel disturbed by construction and annual gravel passage activities to match adjacent shoreline conditions.
- Identifying areas in the tailrace and fish barrier weir vicinity to receive post-construction contouring, replanting, and regeneration.
- Ensuring all sources of plant material will come from the Decommissioning Project vicinity within the Skagit River basin.
- Creating an agreement with the NPS to propagate the needed plants via the existing plant propagation Memorandum of Agreement between the NPS and City Light.

14.1.5 Cultural Resources Mitigation and Management Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $90,000 to develop the CRMMP for Alternative B and $75,000 for Alternative C. Implementation of the CRMMP is dependent on many factors, including identification of historic properties, evaluation of adverse effects, and development of mitigation through consultation. Until those Section 106 steps are completed, costs for implementation of a CRMMP are not practicable to estimate.

Preliminary List of Measures and Best Management Practices

A CRMMP would be developed in consultation with affected Tribes, NPS, and DAHP, and may include:

- Description of identified historic properties (i.e., significant buildings, structures, sites, objects, and districts including TCPs) within the APE.
- Provisions for unanticipated discoveries of historic properties during construction which may include archaeological monitoring of ground disturbing activities that were not accessible for the archaeological survey.
- Mitigation provisions for adverse effects to historic properties. This may include photographic documentation and reporting as well as new and updated interpretive signs, archaeological excavations of identified archaeological sites, or development of Tribal interpretive material.
- Long-term management provisions for historic properties that would remain.

14.1.6 Spill Plan

Concept-Level Cost Estimate

At this time, City Light estimates a cost of approximately $150,000 to develop and implement the Spill Plan for Alternative B and $135,000 for Alternative C.

Preliminary List of Measures and Best Management Practices

A Spill Plan would be developed in coordination with the NPS and may include:

- All equipment will be inspected daily for fluid leaks before leaving the staging area, and any leaks will be repaired before the vehicle resumes operation. The contractor will be responsible for preparing and implementing a Spill Plan prior to construction.
- Proper removal and disposal of hazardous materials.
- Washing heavy equipment needed for work below the ordinary high water mark (OHWM) before it is delivered to the job site.
- Inspecting machinery daily for fuel or lubricant leaks.
- Inspecting and cleaning all equipment that will operate below OHWM (flowing or not).
- Replacing all hydraulic fluids with biodegradable fluid (a standard requirement for Ecology 401 water quality certification and WDFW Hydraulic Project Approval terms and conditions).
- Compliance with any conditions included in the Section 401 Water Quality Certification and Section 404 permit for in-water work associated with decommissioning.
- Compliance with any measures included in the Biological Opinion and Incidental Take Statement for listed fish species.

15 ENVIRONMENTAL JUSTICE

This response presents information on environmental justice (EJ), including race and ethnicity, income status, and English proficiency of people in the Decommissioning Project vicinity. The Decommissioning Project is located in Whatcom County, Washington. Given that relatively limited information exists on EJ in the Decommissioning Project vicinity, this section relies on available U.S. Census Bureau (USCB) data for the state, county, census tract, and block group.

The term *environmental justice* means "fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population bears a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or from the execution of federal, state, and local laws; regulations; and policies. Meaningful involvement requires effective access to decision makers for all, and the ability in all communities to make informed decisions and take positive actions to produce environmental justice for themselves" (U.S. Department of Energy 2022[2]).

Pursuant to Executive Order (EO) 14008, *Tackling the Climate Crisis at Home and Abroad*, and EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, as amended, FERC is required to complete an analysis of potential impacts from Decommissioning Project operations on the local community in the Decommissioning Project vicinity to understand the impacts to human health and the environment as they relate to EJ communities, or communities that could be disproportionately impacted by construction of a new facility or the continued operation of an existing facility, including socioeconomic and/or sociocultural impacts.

Additionally, although FERC is not required to comply with EO 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, FERC has voluntarily elected to

[2] United States Department of Energy. 2022. What is Environmental Justice? [Online] URL: https://www.energy.gov/lm/services/environmental-justice/what-environmental-justice. Accessed October 17, 2022.

participate in the process. Pursuant to EO 13985, FERC has developed an Equity Action Plan and recognizes that many of the licensed hydropower projects were constructed prior to implementation of NEPA, or the issuance of EOs related to equity or EJ (FERC 2022[3]). The information compiled in this section is meant to support FERC's consideration of EJ communities as they relate to the decommissioning process.

15.1 Affected Environment

The Decommissioning Project is in the upper Skagit River Watershed, within the NOCA and entirely within Whatcom County, Washington. Within a 1-mile buffer of the FERC Project Boundary, each state, county, and census block were analyzed for racial and ethnic statistics (Table B03002[4]) and poverty statistics (Table B17017[5]) using the 2020 USCB 2016–2020 American Community Survey 5-year Estimate. The entire 1-mile buffer around the FERC Project Boundary lies within Whatcom County and within Census Tract 010103 (Figure 3). There is one Block Group within 1 mile of the FERC Project Boundary (Figure 3).

[3] FERC. 2022. Equity Action Plan. [Online] URL: https://www.ferc.gov/equity. Accessed August 29, 2022.

[4] USCB. 2020a. 2016–2020 American Community Survey 5-Year Estimates – Table B03002: Hispanic or Latino Origin by Race. [Online] URL: https://data.census.gov/cedsci/table?q=B03002%3A%20HISPANIC%20OR%20LATINO%20ORIGIN%20BY%20RACE&tid=ACSDT5Y2020.B03002. Accessed July 25, 2022.

[5] USCB. 2020b. 2016–2020 American Community Survey 5-Year Estimates – Table B17017: Poverty Status in the Past 12 Months by Household Type and Age of Householder. [Online] URL:https://data.census.gov/cedsci/table?q=B17017%3A%20POVERTY%20STATUS%20IN%20THE%20PAST%2012%20MONTHS%20BY%20HOUSEHOLD%20TYPE%20BY%20AGE%20OF%20HOUSEHOLDER&tid=ACSDT5Y2020.B17017. Accessed July 25, 2022.

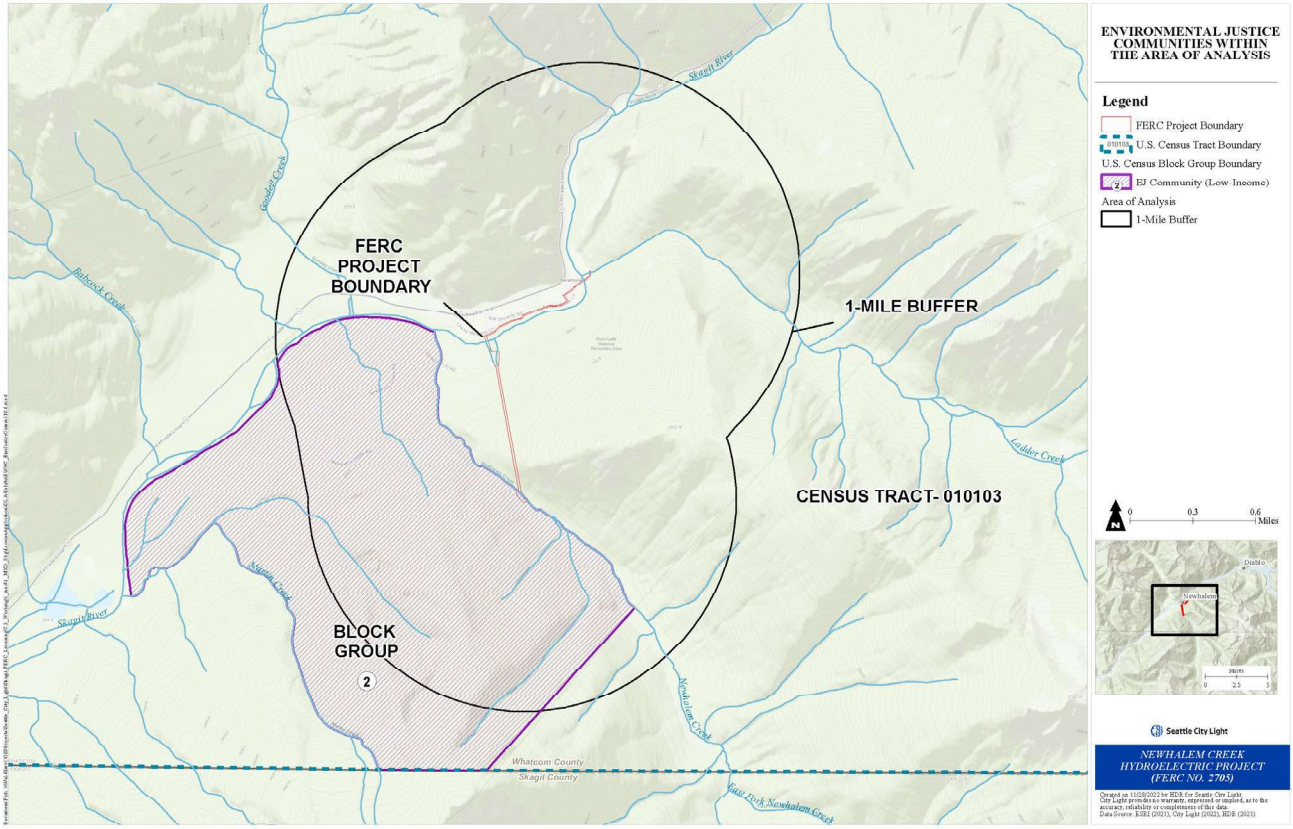

Figure 3. Environmental Justice Communities Within the Area of Analysis.

The presence of EJ communities within the geographic scope of the Decommissioning Project was evaluated through the methods included in the USEPA's Promising Practices for EJ Methodologies in NEPA Reviews (2016[6]). Within 1 mile of the Decommissioning Project, one block group is partially within the Decommissioning Project's area of analysis that could potentially be impacted by the Decommissioning Project. The assessment identified the block group as a low-income population using the low-income threshold analysis. The low-income population block group is detailed in Table 12.

[6] USEPA. 2016. Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. [Online] URL: https://www.epa.gov/sites/default/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf. Accessed August 30, 2022.

Table 12. American Community Survey information for Census Tracts within 1-mile of the FERC Project Boundary.[a]

Race and Ethnicity Data											Low-Income Data
Geography	**Total Population (count)**	**White Alone Not Hispanic (count)**	**African American (count)**	**Native American/ Alaska Native (count)**	**Asian (count)**	**Native Hawaiian & Other Pacific Islander (count)**	**Some Other Race (count)**	**Two or More Races (count)**	**Hispanic or Latino (count)**	**Total Minority (%)**	**Below Poverty Level (%)**
Washington	7,512,465	5,067,909	279,720	75,677	656,578	49,219	23,363	388,477	971,522	33	10
Whatcom County	224,538	175,337	2,123	5,185	9,003	518	484	10,154	21,734	22	14
Census Tract 101.03, Block Group 2	227	181	0	0	0	0	0	41	5	20	35

[a] Calculations performed adhered to the methods included in USEPA's Promising Practices for EJ Methodologies in NEPA Reviews (2016). Race and ethnicity, and low-income percent analysis calculations have been rounded to the nearest whole number, and non-English speaking percent analysis calculations have been rounded to the nearest tenth providing a more conservative and inclusive assessment of EJ communities within the Decommissioning Project vicinity.
Color Indicator: Aqua shading denotes a low-income population EJ community by low-income threshold analysis.

EJ Communities Classification Low-Income Threshold Analysis

The low-income threshold analysis highlights populations within the affected area with an income below poverty level percentage equal or greater than Whatcom County. The identified block group—Census Tract 010103, Block Group 2 in Whatcom County, Washington—was identified as an EJ community within 1 mile of the FERC Project Boundary using the low-income threshold analysis method (Table 12, highlighted in aqua). This community and its location in relation to the Decommissioning Project are shown in Figure 3.

Sensitive Receptor Locations

Sensitive receptor locations are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants (e.g., daycare facilities, schools, elderly housing, hospitals). No sensitive receptor locations are within the geographic scope of analysis.

Non-English-Speaking Groups

Minimal non-English-speaking groups (i.e., speak English less than "Very Well") are within the geographic scope of analysis that may potentially be affected by project decommissioning. The presence of non-English speaking groups within the Decommissioning Project's geographic scope was evaluated through the methods included in USEPA's 2016 Technical Guidance. The single block group (Census Tract 010103, Block Group 2) that lies partially within a 1-mile buffer of the FERC Project Boundary was analyzed for non-English statistics (Table S1601[7]) using the 2020USCB 2016–2020 American Community Survey 5-year Estimate. The analysis returned a total non-English speaking population of less than 1 percent.

15.2 Environmental Analysis

One U.S. Census Block Group lies partially within the Decommissioning Project's 1-mile area of analysis. The assessment identified the block group as potentially affected by the decommissioning the Project under the low-income analysis method.

The Decommissioning Project was initiated with the filing of a Notice of Intent to surrender the Project license on April 28, 2021. City Light filed the Surrender Application on January 28, 2022. FERC notified resource agencies, Tribes, local governments, non-governmental organizations, and members of the public on the Project's distribution list of the availability of Application for Surrender. FERC issued Scoping Document 1 on August 29, 2022, and distributed it to FERC's official mailing list for the Decommissioning Project. FERC stated it did not anticipate conducting public or agency scoping meetings. Instead, FERC solicited written comments, recommendations, and information about Scoping Document 1. All decommissioning process documents are public documents and are posted to FERC's eLibrary. Throughout the decommissioning process, City Light has conducted and will continue to

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[7] United States Census Bureau (USCB). 2020c. 2016-2020 American Community Survey 5-Year Estimates – Table S1601: Language Spoken at Home. [Online] URL: https://data.census.gov/cedsci/table?q=S1601%3A%20LANGUAGE%20SPOKEN%20AT%20HOME&tid=ACSST5Y2020.S1601. Accessed September 1, 2022.

Seattle City Light

conduct outreach and collaboration with intervenors and the Tribes. City Light has not identified a need to conduct additional outreach to the identified EJ community consistent with the remote nature of the Decommissioning Project.

City Light is proposing to decommission the Project with the resource measures identified in the Surrender Application Section E.5 Affected Environment and Environmental Effects. No disproportionately high or adverse Project decommissioning-related resource impacts are anticipated on the identified EJ community. As discussed in the Surrender Application's Exhibit E resource sections, no anticipated resource impacts to private properties, groundwater, or other drinking water sources; housing; or industries of any kind are anticipated. Additionally, as proposed in Exhibit E, construction related to decommissioning will occur entirely on federal lands, except for the removal of one to three poles on the opposite side of the river, which occurs on City Light-owned land. Construction-related air quality, noise, and traffic impacts, if any, will be highly localized to the Decommissioning Project footprint and have no disproportionately high or adverse effects on the nearby identified EJ community.

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 Decommissioning Project. Should you have any questions, please contact me at (206) 386-4571, or the Decommissioning Project Manager, Shelly Adams, at (206) 684-3117.

Sincerely,

Chris Townsend (Dec 12, 2022 12:09 PST)

Chris Townsend
Director Natural Resources & Hydro Licensing
Seattle City Light

Attachment

Cc: Diana Shannon, FERC
Mark Ivy, FERC

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission, I hereby certify that I have this day caused the foregoing document to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, DC, this 12th day of December, 2022.

/s/ Christopher Todd

Christopher Todd
Rock Creek Energy Group, LLP
1 Thomas Circle, NW Suite 700
Washington, DC 20005
Tel: (202) 998-2782
ctodd@rockcreekenergygroup.com

APPENDIX A

Table A-1. Trail of the Cedars 2022 Counter Summary (4/24/22 – 11/7/22).

Month	Total Daily Counts				Average Daily Counts				Maximum Daily Counts			
	Total	Weekday	Weekend	Holiday	Daily Average	Weekday	Weekend	Holiday	Maximum	Weekday	Weekend	Holiday
April	165	70	95	n/a	24	14	48	n/a	49	42	49	n/a
May	1,633	691	352	590	53	33	50	197	278	77	109	278
June	3,519	2,333	1,186	n/a	117	106	148	n/a	248	182	248	n/a
July	5,977	3,423	1,808	746	193	171	226	249	344	264	304	344
August	4,239	2,861	1,378	n/a	137	124	172	n/a	222	214	222	n/a
September	2,935	1,687	531	717	98	80	89	239	281	141	136	281
October	1,088	611	477	n/a	35	29	48	n/a	83	77	83	n/a
November	64	43	21	n/a	9	9	11	n/a	14	14	11	n/a
Total	**19,620**	**11,719**	**5,848**	**2,053**	**99**	**85**	**115**	**228**	**344**	**264**	**304**	**344**

Source: RA-01 Draft Recreation Use and Facility Assessment, Skagit River Hydroelectric Project, FERC No. 553. Updated Study Report. December 2022.
Notes: n/a = not applicable