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VIA ELECTRONIC FILING

June 06, 2023

KIMBERLY D. BOSE SECRETARY FEDERAL ENERGY REGULATORY COMMISSION 888 FIRST STREET, NE WASHINGTON, DC 20426

Re: Skagit River Hydroelectric Project, FERC Project No. 553-235 – Response to Comments on the Updated Study Report Meeting Summary and Requests for Modifications to Ongoing Studies and Requests for New Studies

Dear Secretary Bose:

Pursuant to 18 C.F.R. § 5.15(f) of the Federal Energy Regulatory Commission's (FERC or Commission) regulations, the City of Seattle, Washington, through its City Light Department (City Light), hereby files with the Commission its response to licensing participants (LP) comments on the Updated Study Report (USR) meeting summary and requests for new studies or study modifications.

Background

The current license for the Project expires on April 30, 2025. In accordance with the Commission's Integrated Licensing Process (ILP) regulations, City Light filed the Proposed Study Plan (PSP) on December 8, 2020. The PSP included a suite of 28 relicensing studies and responded to study requests from LPs. After extensive PSP meetings and careful review of LP comments on the PSP, City Light significantly expanded and modified its PSP in the Revised Study Plan (RSP) filed on April 7, 2021, which included a proposed suite of 33 relicensing studies. Following filing of the RSP, City Light continued to work with LPs to attempt to resolve outstanding areas of disagreement regarding the proposed studies. On June 9, 2021, City Light filed a "Notice of Certain Agreements on Study Plans for the Skagit Relicensing" (June 9, 2021 Notice) detailing additional modifications to the RSP that were agreed to between City Light and supporting LPs. The Commission issued its Study Plan Determination on July 16, 2021, approving with modifications City Light's RSP. No study disputes were filed with the Commission.

City Light filed its Initial Study Report (ISR) on March 8, 2022, held ISR meetings March 21-23, 2022, and filed an ISR meeting summary on April 7, 2022. A number of LPs filed comments on the ISR and meeting summary, including requests for study modifications and new studies. On August 8, 2022, the Director of the Office of Energy Projects issued a Determination on Requests for Study Modifications (Study Determination on the ISR) adopting one requested study modification in full and one in part and declining to approve the remaining modifications and requests for new studies.

City Light filed its Updated Study Report (USR) on March 7, 2023, held USR meetings March 20-21, 2023, and filed a USR meeting summary on April 7, 2023. City Light has now completed the FERC-approved study plan for the relicensing of the Project, with certain exceptions. As noted in the USR, aspects of several studies remain ongoing. These include:

- CR-04 Inventory of Historic Properties with Traditional Cultural Significance Study: Ethnographers contracted by the Indian Tribes and Canadian First Nations will continue to gather data and information through summer 2023, document and evaluate historic properties with traditional cultural significance, evaluate Project effects, and complete their reporting. In the USR, City Light indicated that all Indian Tribes and Canadian First Nations expect to complete their reporting and transmit a draft study report to City Light by October 1, 2023, and City Light would file a final study report with the Commission between May and August 2024. In response to comments provided during the USR meetings regarding this anticipated timeline, City Light will expedite its preparation of a summary report for the study and file it with the Commission by the end of Q1 2024. At that time, City Light will initiate National Historic Preservation Act (NHPA) Section 106 review and seek State Historic Preservation Office (SHPO) concurrence on National Register of Historic Places (NRHP)-eligibility determinations. City Light will also expedite its preparation of the final study report, which will be filed with the Commission after Section 106 review is complete.
- GE-04 Skagit River Geomorphology Between Gorge Dam and the Sauk River Study: The GE-04 study is substantially complete. However, the 2D mobile bed HEC-RAS sediment transport model added pursuant to the June 9, 2021 Notice remains under development. City Light expects to file the 2D Mobile Bed HEC-RAS Model Development Report with FERC by the end of Q2 2023.
- RA-02 Gorge Bypass Reach Safety and Whitewater Boating Study: The RA-02 study is substantially complete. However, the level 3 multiple flow evaluation has been delayed due to safety concerns, and is tentatively scheduled for summer 2023. City Light expects to file with FERC the Level 3 Multiple Flow Evaluation Results and Findings Technical Memorandum by the end of Q3 2023.

The Commission's regulations at 18 C.F.R. § 5.15(f) provide that any participant or Commission staff may file a disagreement concerning the USR meeting summaries within 30 days, setting forth the basis for disagreement. Any such filing must also include any requested modifications to ongoing studies or proposed new studies. Twelve (12) LPs filed comments on the USR meeting summaries and/or requests for modifications to ongoing studies or requests for new studies, as shown below in Table 1.

Table 1.Licensing Participants Filing Comments on the USR Meeting Summaries
and/or Requests for New or Modified Studies.

Filing LP	Filing Date
Skagit County, Washington	4/3/2023
National Marine Fisheries Service	5/3/2023
Washington State Department of Ecology	5/5/2023
U.S. Forest Service	5/5/2023
Skagit Drainage and Irrigation Districts Consortium LLC	5/5/2023
Sauk-Suiattle Indian Tribe	5/8/2023
Washington State Department of Fish and Wildlife	5/8/2023
Swinomish Indian Tribal Community	5/8/2023
National Park Service	5/8/2023
Upper Skagit Indian Tribe	5/8/2023
U.S. Fish and Wildlife Service	5/9/2023
Nlaka'pamux Nation Tribal Council	5/9/2023

Regulatory Framework

Pursuant to Section 5.15(d) of FERC's regulations, any proposal to modify an ongoing study must be accompanied by a showing of good cause why the proposal should be approved and must include a demonstration that: (1) the approved studies were not conducted as provided for in the approved study plan; or (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way.

Additionally, as further specified in Sections 5.15(f) and 5.15(e), any new study requests at this point in the ILP must demonstrate "extraordinary circumstances" warranting approval and include a statement explaining: (1) any material changes in the law or regulations applicable to the information request, (2) why the goals and objectives of any approved study could not be met with the approved study methodology; (3) why the request was not made earlier; (4) significant changes in the project proposal or that significant new information material to the study objectives has become available; and (5) why the new study request satisfies the study criteria in Section 5.9(b).

City Light's Response to Requests for Additional Information Gathering, New Studies, and Study Modifications

The LPs identified in Table 1 submitted a number of requests for new studies or requests for gathering additional information. None of these requests for new studies or gathering additional information demonstrate extraordinary circumstances, as required at this stage of the ILP, and thus do not warrant approval. In fact, none of these requests demonstrate the lower standard applicable at the ISR stage—good cause—and thus do not warrant approval.

Similarly, none of the requests for modification of studies—which, with certain exceptions described above, are now complete—include a showing of good cause why the proposal for modification should be approved. Nor do these requests for modification demonstrate that approved studies were not conducted as provided for in the approved study plan or that the study was conducted under anomalous conditions. In many instances, LPs have repeated past study modification requests that have already been addressed by FERC's study determinations. These include proposals for expansion of monitoring below the Sauk River, additional water quality monitoring in side channels, and incorporation of forward-looking infrared mapping (FLIR), among others.

City Light provides a response to several over-arching comments that apply across many studies below. Responses are then organized by study. City Light's response is not intended to address all the comments provided by LPs on the USR and USR meeting summaries. The response does not address general comments on study results or suggested edits to study reports, off-license mitigation measures, comments on the FA-06 Reservoir Genetics Study (which City Light conducted voluntarily), or resource management plans and other protection, mitigation, and enhancement (PME) measures included in the final license application (FLA) filed with FERC on April 28, 2023. Rather, City Light's response is focused on LP comments and recommendations to modify approved studies and requests to conduct new studies or information gathering, using the regulatory framework detailed above.

[1] General Comments

Study and Model Integration

Several parties, including the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and U.S. Fish and Wildlife Service (USFWS) make reference to the need for model and study integration. With the exception of the studies described earlier (CR-04, GE-04, and RA-02), the studies are complete. The FLA integrates study and other available information to fully analyze the Proposed Action and provides a comprehensive PME proposal. The requests for additional time and/or information to further evaluate or integrate study results are not necessary.

Studies Have Not Fully Assessed All Project Effects

City Light implemented a robust relicensing study program consistent with the goals and objectives presented in its RSP and FERC's study determinations. City Light also has completed additional study commitments outlined in the June 9, 2021 Notice. These studies were sufficient for City Light to evaluate its relicensing proposal in the FLA.

Anomalous Conditions

LPs note that for several studies the occurrence of a heat dome and the November 2021 flood may have created anomalous conditions. These conditions did not create a situation where significant data were lost or where study methods were not implemented sufficiently to meet the study goals and objectives. In fact, the occurrence of flood level flows during the study season while monitoring equipment was deployed provided exceptional information that would not otherwise have been available and significantly benefited the modeling effort for studies such as GE-04 Skagit River Geomorphology Between Gorge Dam and the Sauk River Study.

Expanded Geographic Area for Studies or Models

LPs request field study in Canada, additional sampling locations, and expansion of the scope of models for several studies. These requests do not meet FERC's study criteria, and FERC has already determined that these expansions are not necessary in previous study determinations.

Specifically, the National Marine Fisheries Service (NMFS), the National Park Service (NPS), the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS requested that FA-01 water quality sampling and modeling be extended below the confluence with the Sauk River. The Upper Skagit Indian Tribe and USFWS requested that the geographic scope of the FA-01a Water Quality Monitoring Study be modified to include sample collection in the floodplains. The Upper Skagit Indian Tribe requested that City Light expand the geographic scope of the FA-03 Reservoir Fish Stranding and Trapping Risk Assessment to include stranding field surveys in Canada. Washington Department of Fish and Wildlife (WDFW) requested that City Light modify the scope of the FA-07 Reservoir Tributary Habitat Assessment to include additional smaller tributaries, as well as off-channel or possibly disconnected side channel habitat. WDFW also requested that City Light expand the scope of the TR-08 Special-status Amphibian Study to include the Big Beaver Valley. The information requested above is beyond the scope of the approved study plans and is not necessary to assess Project effects, as stated by FERC in its July 16, 2021 Study Plan Determination.

Requests for Full Data Study Sets

Several LPs make study specific requests for additional data beyond which was already provided in the study reports and committed to in the RSP. In most cases, and as feasible, City Light has already provided LPs with the additional requested data. City Light will work with LPs to address the remaining data requests summarized below to the extent the data are available.

The NPS makes a general request for electronic files of all spatial data, field data (including metadata that describes sample locations), and other specific study data requests, such as requests made for GE-01 (erosion site inventory field data), and GE-03 (locations of tree stump measurements). City Light will discuss specific data needs with NPS and provide available data to NPS within 30-days of this letter.

The Washington State Department of Ecology (Ecology) makes a general request that City Light provide all required input data, calibration data, model runs/scenarios, and model output validation necessary to makes its review and determination on a complete 401 application. As further discussed below, City Light has been and will continue to hold one-on-one meetings with Ecology to address information needs for the 401 certification process, and has committed to timely working through water quality issues throughout that process and providing necessary supporting data with the 401 application.

NPS and the Upper Skagit Indian Tribe make specific requests for water quality data, including completion of development of a publicly available database to house the large amount of water quality data, electronic copies of raw data collected and compiled for this study (rather than provided in graphical format or summarized data), and data relating to the CE-QUAL-W2 model.

As discussed below, data collection for the water quality monitoring and modeling studies will continue through May 2023, with an addendum report to be issued thereafter. Once data collection and lab processing are complete, collated and reviewed, City Light will make these data available to LPs.

The Swinomish Indian Tribal Community makes several general requests for further data used in the FA-02 Instream Flow Model Development Study and data supporting model results. City Light has provided the Swinomish Indian Tribal Community with a hard drive containing habitat model outputs at a full range of flows and other background data. To the extent additional specific data are being requested, City Light will work with the Swinomish Indian Tribal Community to provide these background data within 30-days of this letter.

The Upper Skagit Indian Tribe requests that City Light complete and make available for review and comment all outstanding reports and manuscripts (including raw data and metadata used to complete the reports and models) for the FA-07 Reservoir Tributary Habitat Assessment. As the USGS publications are completed, City Light will notify the LPs.

[2] CR-02 Cultural Resources Survey

NPS and the Upper Skagit Indian Tribe each submitted comments or modification requests on the CR-02 Cultural Resources Survey. The goals and objectives of the CR-02 Cultural Resources Survey include assisting FERC with its NHPA Section 106 compliance requirements by identifying historic properties and assessing potential Project-related effects to identified historic properties and potential historic properties (i.e., unevaluated cultural resources), as possible during the inventory level of effort included in the study, along with recommending subsequent measures for managing and/or addressing potential adverse effects to historic properties and potential historic properties. City Light has met the goals and objectives of the CR-02 Cultural Resources Survey.

NPS commented that areas where boat surveys were used constitute a study deviation that will require resurvey of these areas in 2023. The approved study plan anticipated the use of boat surveys. The approved study plan includes a provision that "surveys within these categories are dependent upon ability to access locations due to topography, inundation, or other safety concerns." Further, the final research design prepared for the CR-02 Cultural Resources Survey study and reviewed by NHPA Section 106 consulting parties states the following (City Light 2021:4-9¹):

Roadside and boat reconnaissance will be completed prior to survey along the study area as feasible to ground-truth access routes and potential areas for survey (i.e., steep vs. gently sloping areas, minimal to dense vegetation, etc.) and view areas suggested for shovel probing, which are based on desktop review and are shown as polygons outlined in blue in the attached mapbooks (Attachments A and B). Roadside and boat reconnaissance will also be used to identify areas that would be suitable for visual assessment using spotting scopes/binoculars. Boats will be used to access shorelines along

¹ CR-02 Cultural Resources Survey Research Design. Prepared by HDR Engineering, Inc. October 2021.

SKAGIT RIVER HYDROELECTRIC PROJECT FERC NO. 553-235 – RESPONSE TO COMMENTS ON THE UPDATED STUDY REPORT MEETING SUMMARIES AND REQUESTS FOR MODIFICATIONS TO ONGOING STUDIES AND REQUESTS FOR NEW STUDIES | PAGE 6 OF 27

the Skagit River. Surveyors will observe the riverbanks for exposed profiles and HPAs [high probability areas] to stop and survey.

Boat surveys do not constitute a study modification. Boat surveys on Project reservoirs and the Skagit River were conducted during the study where on-the-ground pedestrian surveys were not possible (primarily due to steep, unsafe slopes or lack of permissions to access private lands) and were used to gather as much data as possible on these inaccessible areas along reservoir and river shorelines. City Light will update the CR-02 Cultural Resources Survey report during upcoming revisions related to NHPA Section 106 consultation efforts to clarify the level of survey completed in areas where boat surveys were used.

City Light anticipates that completion of NHPA Section 106 compliance for the Project FERC relicensing will be accomplished through execution of a Programmatic Agreement (PA) that will outline how historic properties will be managed and considered throughout the life of a new license issued by FERC. City Light is developing a historic properties management plan (HPMP) with Section 106 consulting parties to be implemented under the PA. The HPMP will detail the processes and procedures for managing and considering historic properties under a new license. The HPMP will include measures for continuing historic property identification efforts, assessing Project-related effects to historic properties, and resolving adverse effects to historic properties.

The Upper Skagit Indian Tribe and NPS made several specific comments requesting edits to the final report; these comments will be addressed during Section 106 consultation. Though the CR-02 Cultural Resources Survey is still undergoing NHPA Section 106 consultation, the study is complete and has gathered sufficient data to meet the study goals and objectives.

[3] FA-01a Water Quality Monitoring Study

Ecology, NMFS, NPS, the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS each submitted comments or modification requests on the FA-01a Water Quality Monitoring Study. NMFS, NPS, the Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS requested an additional study season. However, for the reasons discussed below, the LPs do not demonstrate extraordinary circumstances or good cause to warrant approval of a new study or modification.

FERC concluded in the Study Determination on the ISR that the FA-01a study as described in the RSP was sufficient to inform FERC's analysis of Project effects. As noted in the FA-01a study report, while data collection will continue through May 2023, with an addendum report to be issued thereafter, the study is substantially complete and the goals and objectives of the FERC-approved study plan have been met. Additional data collection is not necessary to inform assessment of Project effects, and a comprehensive assessment of the Proposed Action has been provided in the FLA. Furthermore, City Light has proposed to continue water quality monitoring as described in the Water Quality Data Management and Monitoring Plan provided in the FLA to provide continued monitoring and information development on water quality.

Several LPs have requested expansion of data collection to additional parameters and on a broader geographic scope below the Sauk and into the flood plain areas. In its Study

Determination on the ISR, FERC determined that parameters and locations identified in City Light's water quality monitoring study were sufficient to inform the development of license conditions.

Ecology expressed concerns regarding the need for additional details on reducing and mitigating exceedances of water quality criteria and ensuring those issues will be timely addressed before the 401 certification application. City Light has been and will continue to hold one-on-one meetings with Ecology to address information needs for the 401 certification process, and has committed to timely working through water quality issues throughout that process.

[4] FA-01b Water Quality Model Development Study

Ecology, NPS, the Sauk-Suiattle Indian Tribe, Upper Skagit Indian Tribe, and USFWS each submitted comments or modification requests on the FA-01b Water Quality Model Development Study.

The goals and objectives of the FA-01b study were to document the hydrodynamic and temperature model development, calibration, and results. As noted in the USR, the FA-01b Water Quality Model Development Study is substantially complete and has met its goals and objectives.

Ecology, NPS, the Sauk-Suiattle Indian Tribe, Upper Skagit Indian Tribe, and USFWS all expressed concerns over the timing of the water quality model development and calibration. As stated in the FA-01b study report, City Light will continue data collection and water quality model development and calibration through Spring 2023. The intensive water quality monitoring described in the FA-01a Water Quality Monitoring Study report and again in the FLA provide a surplus of empirical information on the status of water quality at and downstream of the Project.

NPS requested modifications to the FA-01b model development that they suggest would improve model performance. In response to the model simulating temperatures in June that are colder than observed temperatures at the Little Beaver profiling location in Ross Lake, NPS suggested routing the combined flow of Lightning Creek and Hozomeen Creek to the location of Lightning Creek instead of the location of Hozomeen Creek, which is used in the model. This was tried during model calibration and it did not make a meaningful difference in the calibration of the vertical profile of Ross Lake at the Little Beaver location in June 2020. Between June 1, 2020 and June 18, 2020 (the date of the profile of observed data), the average temperature of the Hozomeen-Lightning tributary in the model was 7.9°C and the average temperature of the Skagit River inflow in the model was 8.5°C. Moving the inflow location to a point downstream of the Little Beaver monitoring location did not have a meaningful effect on the simulated temperature profile because this temperature difference is small relative to the difference between model and data. With this observation, the effort to create a separate Lightning Creek tributary was not necessary to assess the Project's effects on water temperature. Accordingly, City Light met the goals and objectives of the study.

In response to the NPS comment to incorporate continuous temperature data collected by NPS from four locations in Ross Reservoir (Hozomeen, Little Beaver, Skymo, and Pumpkin) for calibration and verification of the model and to improve performance of the model, the depths of these thermistor chains were not provided. NPS described the depths verbally in a call in the first half of 2022, but this conversation was not followed up with documentation by NPS. Without depths, these data are not useful for comparison to model output.

In response to the NPS request that City Light describe how the deviation from normal operations was accounted for in model calibration and that the model outputs from 2019 be compared to 2018 and 2020 to aid in this evaluation (as well as the NPS, Upper Skagit Indian Tribe, and USFWS comment that 2019 was an anomalous year, and the Sauk-Suiattle Indian Tribe comment that 2021 was an anomalous year), 2018 wasn't used for calibration—the model was calibrated to both 2019 and 2020, a hot year and an average year respectively. Calibration to these years shows that the model provides a reliable representation of the processes driving the hydrodynamics and temperature within the system. Having a range in conditions within the calibration dataset strengthens the model's robustness at simulating a wider range of conditions. Additionally, a ranking of daily average and 7DADMax Skagit River temperatures (ranked top 7 or 8 out of 21 years). Accordingly, City Light met the goals and objectives of the study.

The Upper Skagit Indian Tribe requested extension of the model beyond the Sauk and Baker rivers. In its Study Determination on the ISR, FERC did not recommend extending the temperature model beyond the extent proposed by City Light. Accordingly, City Light met the goals and objectives of the study.

[5] FA-02 Instream Flow Model Development Study

The Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS each submitted comments or modification requests on the FA-02 Instream Flow Model Development Study.

USFWS comments on the need for FA-02 model integration with other relicensing tools. This has been addressed in Section 1 General Comments, above.

The Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, and Upper Skagit Indian Tribe state that the FA-02 study, as approved by FERC and described in the RSP, does not constitute a complete instream flow study since the goals of the study were only to develop, calibrate, and validate an instream flow study. Furthermore, they assert that LPs have not had access to the FA-02 model to identify and evaluate alternative scenarios and that City Light has not engaged LPs in these discussions. Specific deficiencies of the model asserted by LPs include the absence of time series analysis; the model domain not including and recognizing the importance of and being validated to off channel areas or considering groundwater; the model domain ending at the Sauk River confluence; and model outputs of maximum Usable Habitat Area being highest at the lower end of modeled flows. The Swinomish Indian Tribal Community and Upper Skagit Indian Tribe requested an additional study season or more time to complete the study.

The study is complete and the goals and objectives of the FERC-approved study plan have been met. The model tool has been used to identify and evaluate alternative scenarios in consultation with LPs. Since completion of the model, City Light has held technical workshops to introduce the completed and calibrated model and to explore alternative scenarios requested by LPs. Over the course of these workshops, and in coordination with other relicensing models, scenarios have been explored including process flows (channel maintenance and forming flows), off-channel connectivity flows, flows more consistent with naturalized regimes, and flows to evaluate whether improvements to existing license Flow Settlement Agreement protections could be identified.

Descriptions and operations model results of alternative scenarios is documented in the scenario development report (Attachment D of the OM-01 Operations Model Study report), and an integrated analysis of City Light's Proposed Action with results considered from all modeling tools is provided in the FLA. As described in response to comments on the OM-01 Operations Model Study, many aspects of the LPs' requested operational scenarios have been incorporated into the Proposed Action as part of the FLA.

LPs have requested numerous expansions of the model that FERC has already determined are not required. City Light responded to these requests in both the study plan and ISR response documents, addressing the lack of a groundwater component, the model domain ending at the Sauk River confluence, and the lateral extent of the calibrated model domain not including off channel and floodplain areas. With regard to the lateral extent of the model domain, it is important to note that the purpose of this model was to develop a new *instream* flow model that could replace the existing tool used under the current license. The model's primary focus was to model instream flow (i.e., main channel) and aquatic habitat relationships within the 5 percent to 99.9 percent exceedance probabilities. City Light has met that goal with the FA-02 Instream Flow Model Development Study.

[6] FA-03 Reservoir Fish Stranding and Trapping Assessment

NMFS, NPS, the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, USFWS, and WDFW each submitted comments on the FA-03 Reservoir Fish Stranding and Trapping Risk Assessment, including requests for study modification and an additional study season. The Swinomish Indian Tribal Community expressed agreement with the comments noted by other LPs.

LPs requested numerous modifications to study methodology which require an additional season of study. However, LPs do not demonstrate extraordinary circumstances or good cause to warrant approval of study modifications or additional time for study. FERC approved the study methodology in the Study Determination on the ISR, noting that the study design is not intended to document every stranded fish, and that City's Light study approach was consistent with other stranding evaluations conducted at hydroelectric projects. City Light followed the methods in the FERC-approved study plan, and implementation of the study met the study goals and objectives. LPs comments (and in the case of the NPS, additional stranding observation) also do not demonstrate extraordinary circumstances and therefore do not warrant modifications to the findings of the study report. The study report provides information sufficient to assess Project effects and to inform development of license requirements. Additionally, the Reservoir Management Plan proposed by City Light in the FLA includes ongoing surveillance and management related to stranding and trapping in the new license term.

[7] FA-04 Fish Passage Technical Studies Program

The Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, USFWS, and WDFW each submitted comments or modification requests on the FA-04 Fish Passage Technical Studies Program.

USFWS and WDFW disagree with the conclusions that existing features analyzed as part of the study are total barriers to Bull Trout. The Upper Skagit Indian Tribe supports this comment. WDFW believes additional analysis is necessary.

While the FA-04 Fish Passage Technical Studies Program study report acknowledges literature provided by the USFWS regarding Bull Trout swimming capabilities, the same methodological approach to evaluating leaping and swimming capabilities for other target species was applied to Bull Trout. Existing empirical information corroborates the results of Bull Trout passability documented in the USR. Bull Trout have not been observed above the existing features in the Gorge bypass reach (below Gorge Dam). Historical information indicates that the Gorge bypass reach was part of a much larger gorge/canyon complex of narrow, steep and high velocity features where passage would be extremely difficult. Existing genetic data including results of the FA-06 Reservoir Native Fish Genetics Baseline Study indicate that Bull Trout populations above and below the Gorge Dam are distinct from one another. The evidence suggests that this has been the case prior to the Project's existence. The USFWS Recovery Plan also delineates Skagit River Bull Trout into two core areas at this location—the Upper Skagit and Lower Skagit core areas.

The Upper Skagit Indian Tribe asserts that LPs were not consulted on the last phase of the 3-phase feasibility assessment, that co-managers observations in the Gorge bypass reach should be considered, and that value engineering on the proposed schedule is needed. A final draft of the Phase 3 feasibility assessment report (an element of the study) was provided to LPs as a courtesy in advance of filing of the USR. City Light encouraged LPs to submit any comments on this report as part of their USR comments. The USR includes information on observations from co-manager conducted field surveys. The results of these field surveys are consistent with the results of the assessment of existing features. As part of the study, City Light collaborated closely with LPs regarding the development and modification of facilities based upon LP interests and values. The final list of conceptual fish passage alternatives reflects these collaborative discussions. City Light has committed to collaborating with the Upper Skagit Indian Tribe consultant on value engineering as an element of the Fish Passage Program proposed in the FLA.

The Sauk-Suiattle Indian Tribe recommend that a fish collection facility be developed and constructed immediately to target Ross Lake given its greatest distribution and productivity potential and they assert no introduction studies will have merit without the fish present to support assessments of productivity and migration behavior.

The Swinomish Indian Tribal Community asserts that the study addressed the engineering elements of fish passage but lacked specific details and analysis regarding the biological and procedural elements that include target species, identification of appropriate donor stocks, ESA and recovery implications, and whether a program could meaningfully contribute to the goal of increasing abundance and productivity of anadromous salmon to meet harvest and conservation needs. The Swinomish Indian Tribal Community state, in sum that significant questions remain regarding fish passage viability.

City Light agrees with the Swinomish Indian Tribal Community that significant questions remain regarding fish passage viability and that the establishment of fish passage program goals, objectives, and associated biological information is critically important. Early in study implementation, City Light's study team requested input from LPs with fish management responsibility (i.e., co-managers) regarding these information needs to support conceptual fish passage engineering design. Feedback received was that this input was a co-manager responsibility, was not necessary as a part of the study, and would be developed by co-managers and provided at a future date. This decision was documented in the ISR. General biological assumptions (e.g., broader range of potential target species and escapement numbers, a la carte menu of upstream and downstream facilities that could be mixed and matched, etc.) were made that did not impact completion of the study goal and objectives. The specific details on biological and regulatory considerations in addition to the interest in introducing fish into Ross Lake to support passage studies (e.g., pilot studies, etc.) are identified as items to be addressed in the Fish Passage Program proposed in the FLA.

This study is complete. However, some LPs have posed additional questions or requested further evaluation that are next steps. In addition, some of the requested evaluations are co-manager responsibilities and require co-manager input as part of the Fish Passage Program. During implementation of the new license and the proposed Fish Passage Program, City Light plans to work with LPs and be guided by co-manager decisions to refine goals and objectives, identify target species and stocks for passage, identify data gaps and measurable metrics to evaluate objectives, and implement a study program to address specific risk, benefits, and constraints to target species.

[8] FA-05 Skagit River Gorge Bypass Reach Hydraulic and Instream Flow Model Development Study

The Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, USFWS, and WDFW each submitted comments or modification requests on FA-05 Skagit River Gorge Bypass Reach Hydraulic and Instream Flow Model Development Study. Comments from the Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS were specific to integration of constructed models developed for relicensing. This has been addressed in Section 1 General Comments, above.

WDFW states that a flow ramping analysis consistent with Washington State Instream Flow Guidelines (Beecher and Caldwell 2022) should be conducted. In the FLA, City Light proposes down ramp rates and monitoring as implemented under the current license since existing monitoring information indicates these rates are protective. City Light continues to consult with Ecology on information, analysis, and future monitoring that may be needed to support continuing down ramp rates or modifications, if necessary. This information will be included in the Project 401 Water Quality Certification Application. In consultation with Ecology, the FA-05 model will be utilized as necessary to support development of the 401 Application.

This study is complete and is consistent with the methods identified in the FERC-approved study plan.

[9] FA-07 Reservoir Tributary Habitat Assessment

NMFS, NPS, the Upper Skagit Indian Tribe, USFWS, and WDFW each submitted comments or modification requests on the FA-07 Reservoir Tributary Habitat Assessment. NMFS, the Upper

Skagit Indian Tribe, and WDFW request additional time to complete the study. The Sauk-Suiattle Indian Tribe and Swinomish Indian Tribal Community supported NMFS comments.

NMFS, NPS, the Upper Skagit Indian Tribe, and USFWS assert that assumptions and conclusions made regarding low prey base, productivity, and growth rates in tributaries; predation mortality rates; and underrepresentation of rearing productivity potential of reservoirs (in particular Ross) are erroneous. These LPs further assert that the information supporting conclusions of low productivity, prey base, and growth rates is not available because the publications are currently in the peer-review process. WDFW questioned assumptions made regarding juvenile mortality associated with fish passage.

NMFS, NPS, and USFWS also state that extrapolation of field work conducted in the U.S. portion of Skagit tributaries to the Canadian portion of Skagit tributaries is unjustified and disqualifies the study as complete. NPS and USFWS noted that targeted sample sizes in U.S. tributaries were not achieved and therefore the study is not complete. NMFS and USFWS commented that the intrinsic potential and Unit Characterization Method (UCM) had limitations.

Per the RSP and FERC's July 16, 2021 Study Plan Determination, Project tributaries are not affected by Project operations and were therefore not included in the scope of the approved study. Additionally, inclusion of the Canadian portion of the Skagit River and associated tributaries was not a required element of the study since it is outside of FERC's jurisdiction. City Light conducted these elements of the study voluntarily.

With regard to assumptions and conclusions on factors that impact reservoir rearing potential, this information was derived from a multi-year study approved by the current license implementation committee and conducted by the USGS. While these publications are currently in the peer review process and will be provided when available, much of the salient information has been shared with LPs through presentations and discussions with the study team. Furthermore, relevant information from the USGS study has been considered and included in the FLA.

Juvenile mortality rates associated with fish passage operations were acquired from previously published sources of programs likely similar to an envisioned fish passage program at the Project and are included in the USR.

While several LPs noted that intrinsic potential and UCM had limitations, the methodology employed for the study was adopted directly from requests made by LPs during study planning and subsequent discussions with LPs on the overall study approach (Burnett et al. 2007, Cooper et al. 2020, Cramer and Ackerman 2009).

This study utilized several approaches to determine habitat capacity for stream rearing anadromous species using a combination of habitat potential, geomorphic and hydraulic conditions that change seasonally. City Light sampled 18 percent of the potential habitat in the U.S. and Canada streams combined (31 percent in U.S.) and then extrapolated based upon stream type. In contrast, Cooper et al. (2020) sampled six percent of the extrapolated stream length.

While there are limitations with all models, the UCM results were compared with a competing model (Beechie et al. 1994²) developed for the Coho Salmon in the Skagit River. The UCM predictions for coho smolts of approximately 270k and the Beechie et al. (1994) estimates of 139k in streams and another 126k in the reservoirs are only two percent different.

While not a required element of the study, additional sampling in Canada would only reduce the currently optimistic rearing capacity estimate. The tributaries of the Skagit River in Canada have a higher proportion of steep reaches than U.S. streams, which suggests there are likely more natural barriers that would reduce the length of potential habitat, along with naturally low stream flows that reduce access to potential habitat for fall spawning fish.

This study is complete and consistent with the methods identified in the FERC-approved study plan. As discussed above, LPs have several study modification requests that have been previously submitted and were not required per the FERC study determinations. During implementation of the new license and the proposed Fish Passage Program, City Light anticipates additional study to address specific risk, benefits, and constraints to anadromous species that are included in the Fish Passage Program.

[10] FA-08 Fish Entrainment Study

NMFS and the Upper Skagit Indian Tribe each submitted comments or modification requests on the FA-08 Fish Entrainment Study. NPS, the Sauk-Suiattle Indian Tribe, and the Swinomish Indian Tribal Community supported NMFS comments.

NMFS recommends that this study be repeated annually as anadromous fish are placed above the dams since anadromous fishes are more vulnerable to entrainment. The Upper Skagit Indian Tribe requests modification to the study, asserting that the desktop exercise does not reflect empirical evidence of downward fish movement from Ross Lake to the Gorge bypass reach and suggests a new study to verify the desktop exercise (including tagging of reservoir fish) should be implemented.

The requests for study modification and new study do not demonstrate extraordinary circumstances warranting approval. The analysis methodology used in City Light's study is a standard and widely accepted methodology for estimating entrainment potential at hydropower projects and was approved by FERC in its July 16, 2021 Study Plan Determination. FERC considered and did not require field-based entrainment and impingement study in both its July 16, 2021 Study Plan Determination and August 8, 2022 Study Determination on the ISR. FERC observed that along with the FA-08 study results, there is sufficient existing information from the literature and City Light's ongoing acoustic telemetry study of adult Bull Trout in the Project reservoirs to assess these potential effects (Section 5.9(b)(4)).

² Beechie, T., E. Beamer, and L. Wasserman. 1994. Estimating Coho Salmon rearing habitat and smolt production losses in a large river basin, and implications for habitat restoration. North American Journal of Fisheries Management 14(4):797–811.

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Per the June 9, 2021 Notice, City Light included a list of all anadromous species requested by LPs (regardless of current presence in the reservoirs) in the desktop analysis and study report. As the study is a desktop analysis, repeating it annually will not yield unique results.

During implementation of the new license and the proposed Fish Passage Program, City Light agrees that additional study to assess specific risks to introduced anadromous fishes should be considered once species to be included in the Fish Passage Program are identified.

[11] GE-01 Reservoir Shoreline Erosion Study

NPS submitted modification requests on the GE-01 Reservoir Shoreline Erosion Study. NPS provided suggested text revisions to the study report. NPS further asserts that the GE-01 Reservoir Shoreline Erosion Study does not sufficiently measure deposition in the Ross Reservoir drawdown zone, and requests a revised report that includes (a) basic summary statistics from stumps affected by deposition, including sample locations with lake elevations, the prevailing underlying geology, and the slope and aspect; (b) a summary of design wave heights based on fetch and observations on Ross Reservoir be included in the discussion of wave process; (c) a summary of estimations made by Riedel (1990) based on measured windspeed and observations over several years; (d) criteria used to determine if a site was stabilized and a side by side comparison from the 1990 record to the 2021-2022 record to demonstrate the change in stability; and (e) the need for more erosion monitoring in the drawdown moving forward in order to design and implement a resource protection plan with a heightened emphasis on areas shown to be highly erodible, as well as including a plan for measure and tracking deposition.

The GE-01 Reservoir Shoreline Erosion Study has been completed consistent with the methods in the FERC-approved study plan (the methods and information gathered are fully described in the study report), and the information is sufficient to inform the development of license conditions by FERC. City Light does not intend to revise the report based on NPS comments. However, City Light has proposed a Reservoir Shoreline Management Plan in the FLA and will continue to work with NPS on actions identified in that plan.

[12] GE-02 Erosion and Geologic Hazards at Project Facilities and Transmission Line Right-Of-Way Study

The Sauk-Suiattle Indian Tribe and the Upper Skagit Indian Tribe each submitted comments or modification requests on the GE-02 Erosion and Geologic Hazards at Project Facilities and Transmission Line Right-Of-Way Study. The Sauk-Suiattle Indian Tribe indicated interest in a consolidated study for stream crossings along the transmission line ROW, expansion of on-site field assessment to include more locations, and a request to identify stream crossings with greatest impacts of concern to inform prioritization of PMEs. The Upper Skagit Indian Tribe requested additional fish habitat information to assess prioritization of locations to implement PMEs, information on determination of Project roads, and additional analysis to inform PMEs at CMZ tower locations.

The GE-02 Erosion and Geologic Hazards at Project Facilities and Transmission Line Right-Of-Way Study is complete and provides sufficient information to inform the comprehensive analysis of PMEs in the FLA. The study goals and objectives were met as detailed in the study report and City Light followed the methods identified in the FERC-approved study plan. City Light will continue to gather additional site-specific information for prioritization of PME actions during implementation of the management plans. Information on determination of Project routes is described in Appendix H of Exhibit E of the FLA.

[13] GE-03 Sediment Deposition in Reservoirs Affecting Resource Areas of Concern Study

NMFS, NPS, and the Upper Skagit Indian Tribe each submitted comments or modification requests on the GE-03 Sediment Deposition in Reservoirs Affecting Resource Areas of Concern Study.

NMFS disagrees that the sediment budget in the Skagit River below Gorge Dam is balanced and therefore requests a new or revised study effort to quantify the amount of sediment sequestered by the backwater of Ross Reservoir, including the upper Skagit River and tributaries, or conduct a new study to examine the sediment transport capacity below the dams under the new flow regime. NFMS contends that City Light used an inadequately conducted study (GE-03) to estimate the amount of sediment behind the dams in combination with another study (GE-04) to claim that the sediment budget in the Skagit River is in equilibrium.

The Upper Skagit Indian Tribe requests a new study using data that defines the reservoir deposits such as acoustic profiling and longer cores, updated bathymetry, hydrologic data for the Skagit river above Ross Lake and turbidity measurements. NPS requests a modified study for an additional year to more accurately measure sediment sequestered behind the reservoirs using bathymetry and benthic cores to determine how the elevation and volume of sediment has changed since the installation of the dam.

However, as discussed below, NMFS, NPS, and the Upper Skagit Indian Tribe do not demonstrate extraordinary circumstances or good cause to warrant approval of a new study.

NMFS and the Upper Skagit Indian Tribe suggest that increased precision in the estimates of sediment supply to the reservoirs, such as might be created by subbottom profiling and/or coring methods, are needed to understand Project effects. This is discussed in more detail in responses to comments on the GE-04 Skagit River Geomorphology Between Gorge Dam and the Sauk River Study. Although there is fairly high uncertainty inherent to the basin-scale analysis approach used to develop the estimates of sediment supply to the reservoirs (reported as confidence bounds on the estimates) the general understanding that the reservoirs intercept a large volume of cobble to clay-sized sediment that was historically conveyed to the lower river would not change were other methods to evaluate reservoir sedimentation (as proposed by the LPs) applied. Additionally, measured sediment concentration data for each reservoir tributary would be required for such an analysis, which is outside of the scope of the FERC-approved study. The regression-based approach (reported in detail in Attachment R to the GE-04 study report) provides a reasonable and robust assessment of fine tributary sediment supply with sufficient precision to evaluate Project effects.

LPs also re-iterate June 9, 2021 Notice requests for additional bathymetric data that upon review was found to be unnecessary by the study team. Accordingly, the GE-03 study report met the study goals and objectives and the methods described were implemented. The GE-03 study report fully describes how existing data were utilized to meet study goals and objectives in the FERC-approved study plan and provides sufficient information for the evaluation of Project effects.

Finally, NPS requested new study information and inclusion of a Hozomeen backwater study. As noted in both the ISR and USR, City Light met the commitment in the June 9, 2021 Notice to review the potential for a 1D model. This review determined such additional analysis was not necessary and appropriate methods were proposed in the ISR and reported on in the USR. The NPS suggests information from two hydrologic stations in the upper Skagit River in Canada could be used for such modeling, however these modeling stations do not have a long enough period of record to address the analysis NPS requests, and further, there would be limited, if any, additional information provided by a model at this location. The GE-03 study report provides sufficient information for evaluation of Project effects.

[14] GE-04 Skagit River Geomorphology Between Gorge Dam and the Sauk River Study

NMFS, NPS, the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS each submitted comments or modification requests on the GE-04 Skagit River Geomorphology Between Gorge Dam and the Sauk River Study. Many of the LP comments can be summarized in the following categories: (1) confusion about the finding that the sediment mass balance and profile are in a state of dynamic equilibrium; (2) dissatisfaction with the degree of uncertainty surrounding estimates of historic sediment yield in the river above Newhalem; (3) claims that study results are not valid because they include observations during a relatively uncommon recurrence flood; (4) questions about study details; and (5) comments about the need for model integration.

NMFS, NPS, the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS each disagree with the interpretation that the sediment budget for the river is in a state of dynamic equilibrium, claiming that the clearly reported trends of ongoing channel simplification and narrowing clearly show disequilibrium. These comments confuse two different key river processes: channel profile and sediment budget equilibrium and channel cross section/planform equilibrium, which should be differentiated. The finding of current dynamic equilibrium to slightly aggradational conditions in the river was based on robust empirical observation (LiDAR geomorphic change detection) including the November 2021 flood, which, being a higher energy event, would be expected to have caused relatively degradational conditions in the main channel. These data were used to calibrate the 1D HEC-RAS model, which simulates flows and bed mobility from 1978 through 2022 and supports the same conclusion. Therefore, the finding is based on observations from the recent past, which provided calibration data for a sediment transport model simulating conditions for over four decades and does not depend solely on the relatively uncommon flood flow that occurred in 2021. Occurrence of the November 2021 flood was extremely fortuitous for the GE-04 study, because measurable bed mobility was needed to calibrate models of bed mobility. In addition to observations through November 2021, scour monitoring data are available for the winter 2019-2020 and 2020-2021 flood seasons, when very limited bed mobilization occurred at the locations of the scour monitors. Further detailed observation of the river when the bed is not appreciably mobilized would not increase the understanding of key geomorphic processes.

The finding that the profile and sediment budget for the river are currently in a state of dynamic equilibrium is consistent with interpretations of some early channel degradation in response to construction of the Skagit Dams (especially as there was a period of reduced sediment supply and

only marginally changed flood flows) or with the understanding that lateral channel simplification is ongoing. In fact, the finding of bed profile/sediment budget is clearly placed within the context that reduced peak flows are resulting in ongoing channel narrowing and simplification (Section 6.5, bullet no. 2 in the GE-04 study report). The GE-04 study report does not claim that the channel planform is in an equilibrium condition but reports historical observations and modeling efforts (Section 5.5.6.1) that suggest the channel is slowly narrowing and becoming more simplified. An integrated management strategy for a regulated river (that includes human infrastructure) must consider the benefits of an increased disturbance regime and potential negative biological effects of larger floods (e.g. redd scour) to determine an optimized approach, including release or process flows (when safe to do so) and other non-flow perturbations to the channel morphology. City Light's proposed PME measures in the FLA balance these considerations.

NMFS disagrees that the sediment budget in the Skagit River below Gorge Dam is balanced based on the observation that there is limited understanding of the amount of sediment sequestered by the backwater of Ross Lake, a concern shared by the Upper Skagit Indian Tribe. Increased precision in the estimate of reservoir sedimentation is not needed to understand the current geomorphic dynamics of the river—namely that a volume of sediment historically connected to the river is now deposited in the reservoirs. Higher precision information regarding reservoir sedimentation rates and volumes trapped would only be needed were there evidence that the reservoir volume was at risk of filing with sediment over a relevant management timeframe or were there serious consideration of returning to unregulated flow conditions. Neither of these apply to the Project.

NMFS and the Swinomish Indian Tribal Community both request a sediment budget be developed. A detailed sediment budget for the river is included in the GE-04 study report (at Section 5.5.5).

NPS and the Upper Skagit Indian Tribe observe that various approaches to reporting uncertainty, error, and statistical variability are used in the GE-04 study report. This is because a wide range of data types and analytical procedures are included in the study, with different standards for reporting uncertainty, error, and statistical variability. Although not reported in Section 4.1.4, Section 4.5.5 does report the Level of Detection used in the LiDAR surface comparison, which was 0.5 ft and based off of the underlying precision and accuracy of the two LiDAR datasets, following standardized procedures (Brasington et al. 2003³, Wheaton et al. 2010⁴). Because cut tends to be more spatially restricted than fill, the net effect of the 0.5 ft level of detection threshold is most likely to reduce the interpreted aggradation in the comparison (Wheaton et al. 2010).

NMFS, the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and USFWS provided comments about the mobile bed modeling program reported in the GE-04 study, in most cases questioning the need for more integration between the sediment

³ Brasington, J., J. Langham, and B. Rumsby. 2003. Methodological sensitivity of morphometric estimates of coarse fluvial sediment transport. *Geomorphology*, *53(3)*, *299–316. doi*:<u>10.1016/S0169-555X(02)00320-3</u>.

⁴ Wheaton, J.M., J. Brasington, S.E. Darby, and D.A. Sear. 2010. Accounting for uncertainty in DEMs from repeat topographic surveys: improved sediment budgets. *Earth Surface Processes and Landforms, n/an/a. doi:10.1002/esp.1886*.

transport modelling program, operations model, and habitat model. The approved study plan for GE-04 was to develop models suitable for addressing questions about the relation between project operations and channel morphology and did not include scope for systematic model application to address these questions. Nonetheless, the USR reported what was learned about those relations in the process of model development, exceeding the commitment in the FERC-approved study plan. Application of these modeling tools to simulate long-term channel response to alternative river management scenarios will be considered as part of future adaptive management considerations as proposed in the FLA. Because of differences in the model logic schematizing the geometry and processes occurring in the river, model integration must be completed by understanding the implications of each model's results in light of the other values of concern.

NMFS and USFWS provided specific comments to the effect that the 2D mobile bed model is necessary for an effects analysis. Because the 2D mobile bed model (due to computational limitations) can only simulate event-scale hydrographs, is not primarily useful for understanding Project effects—its primary use is to understand expected channel response to local non-flow hydraulic perturbations. Completion of development of the 2D model is not needed to understand the river-scale effects of the Project but will be useful for site specific PME design and refinement.

The Upper Skagit Indian Tribe requested that the UBCRM model include a model run simulating the naturalized conditions 2-year recurrence interval flood. Because this flow is extremely similar to the existing conditions 10-year recurrence interval flood (NHC 2023⁵), only results for that discharge were presented for clarity.

The GE-04 study report meets the FERC approved goals and objectives and provides a robust dataset and supporting analysis to understand current condition of aquatic habitat within the 30-mile segment of the Skagit River between Gorge Dam and the Sauk River confluence and to characterize how Project-related changes in peak flows affect geomorphic processes.

[15] OM-01 Operations Model Study

The Sauk-Suiattle Indian Tribe, Skagit County, Skagit Drainage and Irrigation District, the Swinomish Indian Tribal Community, and USFWS each submitted comments or modification requests on the Operations Model Study. The comments fall into two general categories: (1) the baseline and City Light's 10-foot operational buffer, and (2) the viability and integration of model results. None of the LPs have demonstrated extraordinary circumstances to warrant new information gathering or good cause to warrant approval of the requests for modification on the Operations Model Study. The OM-01 study met the goals and objectives and is sufficient to characterize the Project's effects.

Baseline and 10-foot Operational Buffer: The goals and objectives of the OM-01 study was to develop an Operations Model that describes and simulates existing Project operations for purposes of relicensing, and which can be used to simulate potential future operations under a

⁵ Northwest Hydraulic Consultants (NHC). 2023. Hydrology Datasets, Newhalem to Mount Vernon. Technical memorandum prepared by Northwest Hydraulic Consultants for Seattle City Light. March 2023.

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variety of operating scenarios. The OM-01 study has met those goals and objectives and City Light has consistently disclosed and discussed variances and proposed modifications throughout its development. For example, Section 7 of the OM-01 study report submitted with the ISR states the following:

"City Light originally envisioned simulating both a Base Case scenario (defined by current FERC license requirements) and a Current Operations Baseline scenario (defined to include the current fisheries adaptive management by City Light). However, after a review of operations and operational requirements, it was apparent that the Current Operations Baseline effectively captures current FERC license requirements. Therefore, simulation of separate Base Case and Current Operations Baseline scenarios is not necessary to meet the objective of this study, which is to develop an Operations Model that describes and simulates existing Project operations for purposes of relicensing."

Refinements to the Current Operations Baseline scenario in the OM-01 study report between the ISR and USR were implemented to improve the modeled representation of Project operations under the current FERC license. These refinements to the Current Operations Baseline scenario (which is also now referred to as the "BaselineR3" scenario) are documented in the Skagit River Project September 2022 Operations Modeling Baseline Status Update Memo⁶ (dated September 27, 2022) and were also discussed in the June 16, July 28, August 25, and October 4, 2022 Operations Scenario Workgroup Sessions.⁷

Per LP request, City Light modeled the requested flood risk management scenarios both with and without the 10-foot operational buffer for comparative purposes, as documented in the December 8, 2022 Skagit River Project Operations Modeling Preliminary Modeling Results: FloodRisk01-04 and SpillOps01-02, revised for extension of hydrology through 2021 technical memorandum. These results and the memo were made available to LPs on December 9, 2022 and were included in Attachment D of the OM-01 study report submitted with USR.

Viability and Integration of Model Results: In the FLA, City Light's Proposed Action includes an integrated operations scenario that incorporates the integration of modeling results from the models associated with the FA-01, FA-02, FA-05, and GE-04 studies. This Proposed Action also considers many aspects of the LPs' requested modifications to Ross Lake water surface elevations, flows in the Gorge bypass reach, off-channel connectivity and process flow releases, and modifications to Ross Lake operations for flood risk management that balances flood risk management requests with downstream flow requirements, as described in their comments on the DLA.

⁶ Attached to the OM-01 study report submitted with the USR.

⁷ Meeting materials are attached to the OM-01 study report submitted with the USR.

[16] RA-01 Recreation Use and Facility Assessment

The Nlaka' pamux Nation Tribal Council, NPS, and USFS each submitted comments or modification requests on the RA-01 Recreation Use and Facility Assessment. The NPS and USFS collaborated on their comments and had the same substantive comments in their respective letters. City Light responds to the comments by the NPS, which also apply to the USFS comments.

The NPS and USFS are not requesting any new studies or additional data collection, but are requesting changes to how the data were summarized and interpreted. City Light has provided the RA-01 study data sets to LPs upon request, which allows NPS and USFS to look into more details on the data summarized in the study report. While there were variances from the FERC-approved study plan, the study goals and objectives were met as detailed in the study report. The RA-01 study report is complete and provides sufficient information to inform the comprehensive analysis of Project effects and PMEs in the FLA. Below is City Light's response to specific comments raised by the LPs.

Regional Uniqueness and Significance Assessment: City Light's proposed study plan included a specific question that was not part of FERC's Revised Study Plan questionnaire as requested by the NPS and USFS. City Light used the distinguished national standard for national parks and national recreation areas to understand the Regional Uniqueness and Significance Assessment and provided a general discussion about the uniqueness of the Project in the study report.

Inconsistent Hypothetical Question Responses: City Light's study report inadvertently used shorthand survey question responses without converting them back to the appropriate long form responses (e.g., "changed locations" is "gone somewhere else to recreate"). However, this does not affect the results reported in the study report and is therefore sufficient to characterize the Project's effects and inform the comprehensive analysis of PMEs in the FLA.

Observed Recreation Use, Parking Area Capacity Analysis: Many parking areas in the study area lack specific capacity markings (i.e., stripes). City Light recorded parked vehicles at applicable study sites in the main (designated) parking area and nearby "overflow" areas. The study report provides sufficient data to understand areas experiencing substantial overflow parking and insufficient capacity. City Light's analysis highlights observed parking capacity locations are also the locations where crowding was noted in the visitor survey data. As such, the study goals and objectives were met as detailed in the study report and City Light followed the methods identified in the FERC-approved study plan.

Recreation Use Estimates by Study Site: The methods discussed in the Revised Study Plan state the recreation use estimates will be developed as one overall estimate for Project recreation sites and one overall estimate for non-Project recreation sites. City Light recorded and summarized vehicle and shoreline user spot count data by study site, providing site-specific information on general use levels.

Non-Project Recreation Use Estimate Source Data: City Light reviewed available, non-Project recreation site use data for 2022, including NPS Stats sites, but some (mostly day-use) sites were still missing data (Diablo Lake Overlook, Ross Lake overlooks). City Light determined the most reliable non-Project use data summary was using the NPS Ross Lake National Recreation Area visitation data combined with the USFS sites in the Marblemount area. These data, in addition to

the other non-Project recreation use information on levels and trends summarized in the study report, provide sufficient information to understand the overall recreation use levels in the study area.

Project versus Non-Project Delineation of Sites: City Light followed the delineation of recreation study sites outlined in the Revised Study Plan, and reported and summarized use by Project and non-Project categories based on the FERC-approved recreation sites and non-FERC-approved recreation sites. In the study report, City Light is reporting and summarizing use by these two categories per the Revised Study Plan and is not making a judgment on Project nexus.

Unmet Demand, Antiquated Publications: City Light reviewed information in the Ross Lake General Management Plan provided by NPS. The Plan discussed management strategies for the resource areas and sites rather than unmet demand specifically. City Light's study report met the goals and objectives of the Revised Study Plan by summarizing the three documents noted in the Revised Study Plan for the unmet demand, which provide insights in to existing and future unmet demand in the Project vicinity. City Light's study report provides sufficient information to understand unmet demand and Project effects. Further, the NPS and USFS comments related issues related to the reservoir access at Cottage Creek Boat Launch and the crowding and capacity issues at some study sites were discussed and analyzed in the FLA. In addition, City Light has proposed a Recreation Management Plan in the FLA and will continue to work with NPS, USFS and other interested LPs on the actions associated with that plan and future recreation management over the term of the new license.

Reasonably Foreseeable Events that May Influence Future Use: The Recreation Management Plan proposed by City Light includes ongoing management related to the resource over the term of the new license.

Missing Data: City Light had some missing data, such as trail counter data at Hozomeen locations and campground occupancy data for non-Project study area campgrounds. Despite these variances, the available data in the RA-01 study report is sufficient to understand the overall trail use levels, to characterize the Project's effects, and inform the comprehensive analysis of PMEs in the FLA.

General Comments: City Light provided the RA-01 study data sets to LPs upon request. There was an error in the text summarizing the results of Section 5.2.4 Study Area Visitation, but the results in Table 5.2-10 are accurate.

The Nlaka'pamux Nation Tribal Council supported the comments filed by the NPS and USFS and suggested obtaining additional data on the Hozomeen area campgrounds due to the Silver-Skagit Road closure. As of April 17, 2023, the remaining 50+ kilometers to the Canada/US border are still closed. The road closure during the study season is outside of City Light's control; however, information in the study report is sufficient to inform the development of PMEs. In addition, there will be ongoing management and potential data collection though the next license term as part of City Light's proposed Recreation Management Plan.

[17] RA-03 Project Facility Lighting Inventory

NPS submitted comments or modification requests on the RA-03 Project Facility Lighting Inventory to provide expanded detail on facility/area lighting conditions, modify existing lighting fixtures, and to expand the inventory to include a field assessment of lighting at the Environmental Learning Center (ELC). Available information on lighting at the ELC was provided in the study report as described in the variance. The study goals and objectives of the FERC-approved study plan were met and the information is sufficient to inform FERC's analysis of Project effects.

City Light proposed a Lighting Management Plan in its FLA, which addresses the gap in the lighting inventory for the ELC that was closed during the field inventory due to the COVID-19 pandemic. The plan includes best management practices based on NPS guidance to address exterior lighting on Project facilities, including at the ELC, and the development of a lighting implementation guidance document. Thus, the additional information requested by NPS on facility/area lighting conditions and ELC lighting will be addressed as part of the implementation of the Lighting Management Plan under the new license.

[18] RA-04 Project Sound Assessment

NPS submitted comments on the RA-04 Project Sound Assessment. NPS inquired why City Light used 35 dBA as the extent for each model. In response, the overall Project-wide average hourly L90 was actually 36 dBA, which City Light rounded down to 35 dBA for the sake of even 5-dB contours. This was the average of the overall average hourly L90s as reported in Table 5.2-1 in the RA-04 study report, over all hours in both spring and summer monitoring periods. Although ambient noise may be lower overnight, the vast majority of modeled activities do not typically occur at nighttime. The average nighttime L90 across all sites in both seasons was 34 dBA, so the margin is small in any case.

NPS also inquired about City Light's consultation with Tribal partners. City Light coordinated with City Light's cultural and terrestrial resources team to identify areas of concern for Tribal partners and biological resources, respectively, based on ongoing discussions with each resource group. The coordination helped City Light determine the final proposed long-term measurement locations across the study area.

The RA-04 study is complete. The study goals and objectives of the FERC-approved study plan were met and the information is sufficient to inform FERC's analysis of Project effects.

[19] SY-01 Synthesis and Integration of Available Information on Resources in the Lower Skagit River

The Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe each submitted comments or modification requests on the SY-01 Synthesis and Integration of Available Information on Resources in the Lower Skagit River study report.

The Upper Skagit Indian Tribe requests additional time to further review information gathered in the study and requests that City Light hold additional workshops to identify Project-related data gaps below the Sauk River. The Upper Skagit Indian Tribe requests that City Light use these workshops to identify and then collect field data in 2024 and also repeats requests for geographic

expansion of other relicensing studies. The Swinomish Indian Tribal Community state that the lack of identification of specific field data gaps does not meet the goals and objectives of the study and the Sauk-Suiattle Indian Tribe indicate that while they believe the study is complete, it does not appear to meet the desire of LPs to have evaluated specific Project effects downstream of the Sauk River. All commenters acknowledge the usefulness of the robust database that was built in support of the SY-01 study.

The rationale provided by LPs and requests for additional study to search for Project-related effects in the lower Skagit River do not show extraordinary circumstances or good cause to support modifications to the study. An extensive database of information was created and the summation and evaluation of these data in the study report has fulfilled the goals and objectives of this desktop study. The requested study modifications do not provide evidence of a specific project nexus or that the requested information is necessary to inform the development of license conditions. City Light completed all steps of the study, as approved by FERC in both the July 2021 and August 2022 study plan determinations.

The SY-01 Synthesis Study was a comprehensive review of literature highlighting conditions in the Skagit River below the Sauk River and into the estuary. The suggestion that other relicensing studies have identified new information that need to be integrated into the database and evaluation in conjunction with the SY-01 Synthesis Study results is beyond the scope of the FERC-approved study plan. Further, the integration of information from all studies has been done in the FLA and the requesters do not demonstrate extraordinary circumstances that would require a field component of this study.

[20] TR-01 Vegetation Mapping Study

The Sauk-Suiattle Indian Tribe and Swinomish Indian Tribal Community each submitted comments or modification requests on the TR-01 Vegetation Mapping Study. The Swinomish Indian Tribal Community has indicated a concern that the TR-01 Vegetation Mapping Study does not include information on potential direct Project effects or cumulative effects for terrestrial resources. The Swinomish Indian Tribal Community indicated interest in a consolidated study for the transmission line ROW, and additional data collection for culturally important wildlife species, special-status species, and fine-scale habitat components or habitat use (e.g., corridors, connectivity, etc.).

This study is complete and provides sufficient information to inform the comprehensive analysis of PMEs in the FLA. The study goals and objectives were met as detailed in the study report and City Light followed the methods identified in the FERC-approved study plan. The Wildlife Protection and Enhancement Management Plan and the Mitigation Lands Management Plan proposed by City Light in the FLA include components of the Swinomish Indian Tribal Community's requests for additional data collection, as well as ongoing monitoring and protections related to wildlife and wildlife habitat.

[21] TR-02 Wetland Assessment

NPS and the Sauk-Suiattle Indian Tribe each submitted comments or modification requests on the TR-02 Wetland Assessment. NPS requested additional study/information to be conducted over an additional year of study and expressed concerns regarding variations to the study.

Overall, while there were variances from the FERC-approved study plan, the study goals and objectives were met as detailed in the study report, which was complete with the ISR. Further, the information in the TR-02 Wetland Assessment is sufficient to understand Project effects, and NPS's request for additional study does not demonstrate extraordinary circumstances. The comments and modification requests summarized below do not demonstrate good cause to warrant approval.

Study Methods – Washington State Wetland Rating System for Western Washington: While not all wetlands located in areas potentially influenced by the Project were field assessed (due to safety concerns and access restrictions), remote functional analysis for these wetlands was implemented nonetheless, and was conducted following the Washington State Wetland Rating System for Western Washington. Additional study efforts at these locations would encounter the same barriers. The goals and intent of the methods as described in the RSP have been met because these wetlands were rated and an analysis of their capability to provide water quality, hydrologic, and habitat function was conducted.

Requests for Information in Big Beaver Valley – Field Assessments: Wetlands in the Big Beaver Valley are in an area outside of potential Project effects (reservoir fluctuation)—current Project operation has no effect on the hydrology of those wetlands. Additionally, the presence of reed canarygrass (a wide-spread invasive species that can be spread by a variety of vectors) in Big Beaver Valley is not due to water surface elevations or normal operations and maintenance, so this area was not included in the wetland assessment. Information on the area is available from other sources.

Requests for Information in Big Beaver Valley – Percent cover: As indicated in the Wetland Rating Summary for Wetland 3716 near the mouth of Big Beaver Creek, invasive plants do not cover less than 25 percent of the wetland areas in every stratum of plants. This information was available as indicated in the ISR via the geospatial dataset which includes the Cowardin vegetation class (Cowardin et al. 1979⁸), HGM determination used for the functional assessment, results of the functional assessment, observed dominant plant species, location of sample points, and photographs.

[22] TR-03 Rare, Threatened, and Endangered Plants Study.

NPS submitted comments or modification requests on the TR-03 Rare, Threatened, and Endangered Plants Study. NPS asserts that City Light deviated from the FERC-approved study plan by conducting surveys from boat with binoculars instead of on foot around reservoirs where steep, inaccessible slopes at reservoir shorelines posed safety issues for traversing on foot. This study is complete and was implemented consistent with the FERC-approved study plan and methodology. The study goals and objectives were met as detailed in the study report and the results. Further, the Invasive Plants Management Plan and the Vegetation Management Plan proposed by City Light in the FLA include ongoing protection and enhancement related to rare, threatened, and endangered plants.

⁸ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service (USFWS).

SKAGIT RIVER HYDROELECTRIC PROJECT FERC NO. 553-235 – RESPONSE TO COMMENTS ON THE UPDATED STUDY REPORT MEETING SUMMARIES AND REQUESTS FOR MODIFICATIONS TO ONGOING STUDIES AND REQUESTS FOR NEW STUDIES | PAGE 25 OF 27

[23] TR-04 Invasive Plants Study

NPS and the Sauk-Suiattle Indian Tribe each submitted comments or modification requests on the TR-04 Invasive Plants Study. NPS asserts that City Light deviated from the FERC-approved study plan by conducting surveys from boat with binoculars instead of on foot around reservoirs where steep, inaccessible slopes at reservoir shorelines posed safety issues for traversing on foot. This study is complete and was implemented consistent with the FERC-approved study plan and methodology. The study goals and objectives were met as detailed in the study report and the results. Further, the Invasive Plants Management Plan and the Vegetation Management Plan proposed by City Light in the FLA include ongoing protection and enhancement related to rare, threatened, and endangered plants.

The Sauk-Suiattle Indian Tribe requested consolidated study for resources in the transmission line ROW, in place of the separate reports generated through the implementation of the FERC-approved study plans. The study goals and objectives were met as detailed in the respective study reports and the information in the study reports is sufficient to understand the issues and Project effects. The FLA provides a comprehensive review of all study results in order to inform proposed PMEs.

[24] TR-08 Special-Status Amphibian Study

NPS, USFWS, and WDFW each submitted comments or modification requests on the TR-08 Special-status Amphibian Study. NPS and WDFW have requested an additional year of study due to concerns that the study should have included a more diverse assemblage of amphibian species, with a focus on additional locations and expanded survey timing (include more night surveys). As FERC concluded in the Study Determination on the ISR, the results and planned future data collections were sufficient for the analysis, and it is unlikely that additional surveys would result in any additional observations of special-status amphibians. NPS and WDFW do not demonstrate extraordinary circumstances or good cause to warrant approval in their request for an additional year of study. The study is complete, the study objectives of the FERC-approved study plan were met as detailed in the study report, and the information in the study report is sufficient to understand Project effects.

The USFWS has asserted that this study is incomplete because the species of spotted frog has not yet been genetically confirmed. While City Light indicated in the study plan that genetic samples would be taken if possible, the permits necessary to collect biological samples (e.g., toe clips) were not issued prior to the field work. A swab sufficient to test for eDNA was collected, however, as noted at the USR meeting, there was not an available lab to conduct the testing. The sample has been provided to the NPS. The USFWS has not demonstrated good cause for modification of the study at this stage of the ILP. The study goals and objectives of the FERC-approved study plan were met as detailed in the study report and the information in the study report is sufficient to evaluate Project effects.

City Light looks forward to continued engagement with LPs and FERC staff in further review of its relicensing proposal. If there are any questions regarding this filing, please contact me by phone at (206) 304-1210 or by email at <u>Chris.Townsend@seattle.gov</u>.

Sincerely,

n 6, 2023 09:18 PDT)

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