

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
February 28, 2025

OFFICE OF ENERGY PROJECTS

Project Nos. 2572-141 & 2458-273 --
Maine
Ripogenus Hydroelectric Project
Penobscot Mills Hydroelectric Project
Great Lakes Hydro America, LLC

VIA FERC Service

Michael Scarzello, Licensing Manager
Great Lakes Hydro America, LLC
c/o Brookfield Renewable
399 Big Bay Road
Queensbury, New York, 12804

Reference: Request for Additional Information

Dear Mr. Scarzello:

On September 30, 2024, Great Lakes Hydro America, LLC (GLHA) filed relicense applications for the Ripogenus Hydroelectric Project No. 2572 and the Penobscot Mills Hydroelectric Project No. 2458. Based on our on-going review of the relicense applications and associated filings,¹ we need additional information on your relicense applications for these projects. Pursuant to section 4.32(g) of the Commission's regulations, please provide the additional information requested in the enclosed Schedule A within **90 days** from the date of this letter, unless otherwise noted. If the requested information causes any part of the application to be inaccurate, that part must be revised and refiled by the due date.

¹ On November 13, 2024, Brookfield Renewable d/b/a Great Lakes Hydro America, LLC submitted the Level 2 Whitewater Boating Study Report for the Penobscot Mills Hydroelectric Project No. 2458. Available at: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=EA1BA323-20AE-C210-9D4A-932709F00000>.

P-2572-141 and P-2458-273

- 2 -

Within 5 days of receipt, provide a copy of this letter to all agencies you will consult in response to this additional information request. Then, when you file the requested information with the Commission, you must provide a complete copy of the information to each agency consulted under 18 C.F.R. section 16.8 of the Commission's regulations.

The Commission strongly encourages electronic filing. Please file the requested information using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.aspx>. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, D.C. 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing should include docket numbers P-2572-171 and/or 2458-273, as appropriate.

Please contact Allan Creamer at (202) 502-8365, or via email at allan.creamer@ferc.gov, if you have any questions.

Sincerely,

STEPHEN
BOWLER

Digitally signed by
STEPHEN BOWLER
Date: 2025.02.28
11:19:07 -05'00'

Stephen Bowler, Chief
South Branch
Division of Hydropower Licensing

Attachments: Schedule A – Request for Additional Information

P-2572-141 and P-2458-273

SCHEDULE A REQUEST FOR ADDITIONAL INFORMATION

General Comments

1. Section 1.1, *Purpose of Exhibit E*, of Exhibit E of the final license applications (FLA) for the Ripogenus Hydroelectric Project (Ripogenus Project) and Penobscot Mills Hydroelectric Project (Penobscot Mills Project) (collectively, the Projects) states that Great Lakes Hydro American, LLC (GLHA) has not completed certain studies, as of the filing of the FLA. These studies include: (1) Benthic Macroinvertebrate Assessment (Penobscot Mills Project areas); (2) McKay Station Fish Stranding Mitigation Study; (3) Whitewater Boating Assessment Study; and (4) Historic Architecture Survey. While Table 1.1-1, of Exhibit E, indicates that the results of these reports have been incorporated in the FLA, except for the McKay Station Fish Stranding Mitigation Study, the final study reports for the studies identified above, should be filed to the record, as well. Therefore, please file the remaining study reports (i.e., benthic macroinvertebrate assessment/water quality study, fish stranding mitigation study, and the historic architecture survey/cultural resources study) to complete the record for the Projects' FLA.² Any proposed protection, mitigation, and enhancement (PM&E) measures developed as a result of the completed reports (e.g., *McKay Station Fish Mitigation Study Report*) should be filed with the draft plans identified in AIR #3.

Protection, Mitigation, and Enhancement Measures

2. In section 3.1, *Ripogenus Project – Proposed Operations during Mean, High, and Low Water Years*, of Exhibit B of the FLA, GLHA proposes to coordinate with the appropriate agencies (e.g., the Maine Department of Environmental Protection, the Maine Department of Inland Fisheries and Wildlife (Maine DIFW), the Maine Land Use Regulatory Commission, and the U.S. Fish and Wildlife Service (FWS)) to modify the downstream flow requirements during low water years and droughts. In its response to Maine DIFW's August 1, 2024, and the Maine Bureau of Parks and Land's July 31, 2024, comments on the draft license applications,³ GLHA proposes to develop and implement a low inflow protocol for the Projects to guide project operations during periods of low inflow. Section 3.1 of Exhibit B does not describe the proposal in detail. Moreover, there is no mention of the proposal in section 5.2, *Proposed Project Operations*, or section 5.3, *Proposed PM&E Measures*, of Exhibit E of the FLA. To

² On November 13, 2024, GLHA filed the *Level 2 Whitewater Boating Study Report*.

³ See Appendix E.2 of the FLA (volume 3) at E.2-4 and E.2-15.

P-2572-141 and P-2458-273
Schedule A

ensure that all the PM&E measures are available for Commission staff and stakeholder review, and that staff has sufficient information to inform an environmental analysis of the proposed low-inflow protocol, please clarify GLHA's intent with regard to a low inflow protocol for the Projects. If GLHA is proposing such a protocol, please include it as a component of a proposed Project Operations and Compliance Monitoring Plan that GLHA files with the draft plans identified in AIR #3.

3. Section 5.3, *Proposed Environmental Measures*, of Exhibit E of the FLA states that GLHA proposes to file, within 1 year of filing the FLA, draft Recreation Management Plans for the Projects, a draft updated Loon Management Plan for the Ripogenus Project, a draft updated Wildlife Management Plan for the Penobscot Mills Project, and draft Historic Properties Management Plans for the Projects. In addition, GLHA proposes to file updated Shoreline Management Plans for the Projects within 2 years of license issuance. Finally, GLHA proposes upstream and downstream eel passage measures, including monitoring and a fishway operation and maintenance plan, at the East Millinocket, Dolby, and Millinocket Lake Storage Developments of the Penobscot Mills Project. However, the FLA does not contain, except for recreation measures, detailed descriptions or detailed elements of the proposed plans or any details associated with the eel passage measures. To ensure that all of the proposed PM&E measures are available for Commission staff and stakeholder review, and that staff has sufficient information to inform an environmental analysis for each of the proposed plans, please file the proposed draft plans, after agency and stakeholder consultation,⁴ including a draft plan for eel passage at the Penobscot Mills Project (i.e., structures, monitoring, operations and maintenance plan, and schedule), within **150 days** from the date of this letter.

4. Table 5.3-2, in section 5.3.2, *Penobscot Mills Project*, of Exhibit E of the FLA, indicates that GLHA is proposing to release a year-round minimum flow of 200 cubic feet per second (cfs) in the West Branch of the Penobscot River (West Branch) downstream from Stone Dam. However, there is no explanation of how the flows would be released or monitored. To ensure that all of the PM&E measures are available for Commission staff and stakeholder review, and that staff has sufficient information to inform an environmental analysis of the proposed minimum flow release, please provide a detailed description of: (1) the mechanism by which GLHA proposes to release the minimum flow; (2) the location of the minimum flow release; and (3) how the minimum

⁴ For each plan, as appropriate, the consulting entities should include FWS, the National Maine Fisheries Service, Maine DIFW, the Maine Department of Marine Resources, the Maine Bureau of Parks and Lands, the Maine Council of Trout Unlimited, American Whitewater, and the Caribou and Chesuncook Lake Camp Associations.

P-2572-141 and P-2458-273
Schedule A

flow would be monitored. Please file this information with the draft plans identified in AIR #3.

5. On September 14, 2024, the Caribou and Chesuncook Lake Camp Associations (Camp Associations) requested an additional CHEOPS⁵ Operations Model run for the Projects.⁶ The Camp Associations specifically requested a “Scenario 3,” which involves: (1) monthly target elevations for Ripogenus impoundment, including a target full pool elevation set at 940.1 feet National Geodetic Vertical Datum of 1929; NGVD 29) on May 15 and June 1; (2) monthly target elevations for the North Twin impoundment, including a reduced winter drawdown; and (3) a North Twin discharge of 3,000 cfs from August 22 through October 15, provided the North Twin elevation is greater than 488.42 feet NGVD 29 and the Ripogenus impoundment level is at the target elevations referenced in Item 1 above, and a minimum discharge from North Twin impoundment of 1,500 cfs through the remainder of the year. Appendix E.5, *Operations Model Run Results*, of the FLA (Volume 3) includes the results of three modeling alternatives, including two scenarios requested by the Camp Associations in an August 9, 2024 letter to GLHA and one alternative that reflects GLHA’s proposed operations. However, the appendix does not include the results of the Camp Association’s requested Scenario 3, nor have the results for this scenario been filed subsequent to the filing of the FLA.

To ensure that a range of project operational alternatives has been modeled, and that Commission staff has sufficient information to inform an environmental analysis of the Projects’ operations, please run the Camp Associations’ Scenario 3, and file the results as an amendment to Appendix E.5. Scenario 3 should be modeled with: (1) the generating and minimum flow assumptions used to model the Camp Association’s Scenarios 1 and 2; and (2) the generating and minimum flows proposed by GLHA.

Exhibit B

6. In section 3.1, *Ripogenus Project – Proposed Operations during Mean, High, and Low Water Years*, of Exhibit B of the FLA, GLHA proposes to use a gate at Ripogenus Dam to provide flow to West Branch during unit or station outages at McKay Station. However, GLHA does not specify which gate would be used. To ensure that Commission staff has sufficient information to inform an environmental analysis of

⁵ Computer Hydro-Electric Operations and Planning Software.

⁶ On November 6, 2024, the Camp Associations filed a second request for its model run; and on January 23, 2025, American Whitewater, the Maine Council of Trout Unlimited, the Camp Associations, and the Appalachian Mountain Club, collectively, also requested that Scenario 3 be modeled, and the results be filed to the record.

P-2572-141 and P-2458-273
Schedule A

Ripogenus Project operations, please identify which gate(s) would be used to release flows from the dam.

Exhibit D

7. In Table 4.2.1, in Exhibit D of the FLA, GLHA provides capital and annual costs for the proposed measures at the Ripogenus Project. Two proposed measures in this table would likely result in changes in generation which are not identified in the table. Section 9.0, *Average Annual Increase or Decrease in Generation due to Change in Project Operations*, of Exhibit D, states that the proposed operational measures at the Ripogenus Project would result in a 3,285-MWh increase in generation. To the extent practical, please identify the change in this generation increase that would be attributed to: (1) the 1,700-cfs minimum flow from McKay Station; and (2) target boating flows downstream of McKay Station.

8. In Table 4.2.2, in Exhibit D of the FLA, GLHA provides capital and annual costs for the proposed measures at the Penobscot Mills Project. Two proposed measures in this table would likely result in changes in generation which are not identified in this table. Section 9.0, *Average Annual Increase or Decrease in Generation due to Change in Project Operations*, of Exhibit D, states that the proposed operational measures at the Penobscot Mills Project would result in an 8,798-MWh decrease in generation. To the extent practical, please identify the change in this generation decrease attributed to: (1) the 200-cfs minimum flow from Stone Dam; and (2) the 600-cfs boating flow from Millinocket Lake Storage Dam.

9. Section 9.0, *Average Annual Increase or Decrease in Generation due to Change in Project Operations*, of Exhibit D of the FLA states that the proposed operational measures at the Penobscot Mills Project would result in an 8,798-MWh decrease in generation. However, according to the text in section 9, generation at the Millinocket Development would be reduced by 8,915 MWh, which is greater than the total generation losses estimated for the Penobscot Mills Project. Please clarify this discrepancy.

10. Table 4.2-2, in Exhibit D of the FLA, GLHA provides capital and annual costs associated with its proposed American eel passage measures. However, no costs are given for the proposed downstream eel passage measures at the East Millinocket and Dolby Developments. In section 6.6.2.2, *Environmental Analysis – Penobscot Mills Project*,⁷ of Exhibit E of the FLA, GLHA states that downstream passage measures for eel could include operational changes (e.g., nighttime shut-downs), engineered protection

⁷ See effects discussion in Downstream American Eel Passage section on page E-348 of Exhibit E.

P-2572-141 and P-2458-273
Schedule A

measures, fish-friendly turbine runner replacements, or other measures. To ensure that all the PM&E measures are available for Commission staff and stakeholder review, and that staff has sufficient information to inform an environmental analysis of the proposed downstream eel passage measures, please provide the estimated capital and annual costs for the downstream eel passage measures mentioned in section 6.6.2.2. These costs may be provided with the draft plan for American eel passage that GLHA files in response to AIR #3.

11. In Tables 4.2.1 and 4.2.2 in Exhibit D of the FLA, GLHA provides capital and annual costs for the proposed measures at the Ripogenus Project and the Penobscot Mills Project. To the extent practical, for any new measures recommended by the stakeholders that result in a change in generation, please estimate the increase or decrease in generation associated with that measure.

Exhibit E

Water and Aquatic Resources

12. Table 5.3-1, in section 5.3.2, *Penobscot Mills Project*, of Exhibit E of the FLA, includes a proposal to provide target boating flows of 600 cfs from Millinocket Lake Storage Dam to Millinocket Stream from June through September. However, section 6.5.3, *Water Resources – Proposed Environmental Measures*, of Exhibit E does not include this proposal for the Penobscot Mills Project. Please clarify this discrepancy.

13. Section 5.3.2, *West Branch at Big Eddy*, of the *McKay Station Ramping Study Report*,⁸ states that 228 organisms were observed in the Big Eddy study reach during both operational scenarios (i.e., 3 units to 1 unit; and 3 units to 2 units to 1 unit); 208 were alive and 10 were mortalities, leaving 10 organisms unaccounted for. Table 11, cited in the text, documents 228 organisms observed during the study, of which 218 were alive and 10 were mortalities. Please clarify the discrepancy regarding the number of alive organisms observed at the Big Eddy study reach.

14. Section 6.6.1.1, *Fish and Aquatic Resources – Affected Environment*, of Exhibit E of the FLA,⁹ describes the aquatic habitat within the first 1,000 feet downstream from McKay Station as a set of deep, swift pools and rapids, within a confined gorge. There is no description of the West Branch beyond the project boundary. To ensure that Commission staff has sufficient information to inform an environmental analysis of the

⁸ See Appendix E.6 in Volume 3 of the FLA (pdf pages 379-380).

⁹ See Exhibit E in Volume 3 of the FLA at E-201.

P-2572-141 and P-2458-273
Schedule A

existing and proposed minimum flows in the West Branch, please provide a general description of the aquatic habitat in the West Branch downstream from the project boundary through the area just downstream from the Holbrook Side Channel.

15. Section 6.6.1.1, *Fish and Aquatic Resources – Affected Environment*, of Exhibit E of the FLA,¹⁰ describes the percent of littoral zone area and volume that is maintained in the Millinocket Lake Storage Dam impoundment based on historical minimum lake elevations. A similar analysis is provided for the North Twin impoundment, but also includes an analysis based on an 11-year average minimum lake elevation. To ensure that Commission staff has sufficient information to inform an environmental analysis of the existing and proposed lake level fluctuations in the Millinocket Lake Storage Dam impoundment, please update the analysis for the Millinocket Lake Storage Dam impoundment to also include an analysis based on the 11-year average (2011-2021) minimum lake elevation.

16. Section 6.6.1.1, *Fish and Aquatic Resources – Affected Environment*, of Exhibit E of the FLA,¹¹ describes the 2023 Angler Flow Evaluation Study of the West Branch downstream from Stone Dam. In describing the study methodology, GLHA explains that the casting limit for the study was set at 30 feet, which was based on the average casting distance observed during the study. As noted in the Updated Study Report (USR) Meeting Summary,¹² and in subsequent comments on the USR and meeting summary,¹³ there is concern that the 30-foot casting limit is a shortened distance that reduces the useable/castable area by 50 percent. To ensure that Commission staff has sufficient information to inform an environmental analysis of the existing and proposed minimum flows in the West Branch downstream from Stone Dam, please update the angling flow analysis to include a casting limit of 60 feet, and file this information as an amendment to the *Angler Flow Evaluation Study Report*.

17. Section 6.6.1.1, *Fish and Aquatic Resources – Affected Environment*, of Exhibit E of the FLA,¹⁴ describes the 2024 McKay Station Ramping Study. GLHA indicates that a drone was used during the study to take geo-referenced, high-resolution video and still photographs for the study. To ensure that Commission staff has sufficient information to inform an environmental analysis of the existing and proposed minimum flows in the

¹⁰ *Id.*, at E-210 and E-211.

¹¹ *Id.*, at E-224 to E-230.

¹² GLHA's May 31, 2024 Updated Study Report Meeting Summary at 5.

¹³ Maine TU's July 1, 2024 USR Comments at 7.

¹⁴ See Exhibit E in Volume 3 of the FLA at E-266 to E-272.

P-2572-141 and P-2458-273
Schedule A

West Branch downstream from McKay Station, please file the relevant video and still photographs to the record.

18. Figure 6.6-24, on page E-345 of Exhibit E (Volume 3 of the FLA), graphically presents adult brook trout habitat suitability and wetted area information for the West Branch downstream from Stone Dam, for flows between leakage and 2,000 cfs. The legend for this figure identifies the curves for wetted area, as well as habitat for adult and juvenile brook trout. However, there are three additional curves on that figure that are not defined/labeled. Please provide an updated figure 6.6-24 with a legend that defines all curves represented in the figure.

19. In responding to FWS's comments on the *Updated Fish Assemblage Study Report*,¹⁵ GLHA indicates that Maine DIFW conducted smelt drift surveys in the West Branch downstream from McKay Station in 2021 (data included in the updated *Fish Assemblage Study Report*) and 2022 (data not yet available). To ensure that Commission staff has sufficient information to inform an environmental analysis of the Ripogenus Project's operation, please consult with Maine DIFW regarding obtaining the 2022 smelt drift data and file that data as an amendment to Appendix E.7, *Updated Fish Assemblage Study Report*.

20. Appendix E.7, *Updated Fish Assemblage Study Report*, states that data on fish populations and the fishery collected by Maine DIFW for the Ripogenus impoundment and the West Branch downstream from McKay Station was obtained and summarized in the report.¹⁶ While the report provides a summary of this data, it provides little insight into trends in the fishery over time, specifically during the existing license term. Therefore, please file, as an amendment to the *Updated Fish Assemblage Study Report*: (1) the raw data obtained from Maine DIFW in April and December of 2022; (2) any updated data Maine DIFW has available since that time; and (3) graphical and/or tabular summaries of the data, on an annual basis, by species.

Terrestrial Resources

21. Section 6.7.1, *Wildlife and Botanical Resources*, of Exhibit E of the FLA, includes a map of the existing Wildlife Management Area at the Millinocket Development of the Penobscot Mills Project from the 1997 Wildlife Management Plan (see figure 6.7-1). The map provided is difficult to read and interpret. Therefore, to: (a) facilitate Commission staff and stakeholder review of the wildlife management area and the

¹⁵ See Appendix E.7 in Volume 3 of the FLA at pdf page 538.

¹⁶ *Id.*, at pdf pages 457 to 460.

P-2572-141 and P-2458-273
Schedule A

management plan's measures, and (b) ensure that staff has sufficient information about the status of management in the area to inform an environmental analysis for the plan, please provide an updated, more legible, map of the management area with the Wildlife Management Plan filed in accordance with AIR #3.

Threatened and Endangered Species

22. In our July 31, 2024 comments on the draft license application, Commission staff requested that the FLA include a discussion on the proposed endangered tricolored bat¹⁷ in the *Rare, Threatened, and Endangered Species* section. While the FLA provides a brief description of the tricolored bat, it does not include a discussion of potential project effects to bats, or procedures (e.g., time of year restrictions) for managing vegetation in sensitive habitats such as wetlands, riparian areas during the tricolor bat's active season, or the active season for the endangered northern long-eared bat. To ensure that Commission staff has sufficient information to inform an environmental analysis of the Projects' potential effects on federally listed bats, please provide the following information along with any PM&E measures for bats likely to occur in the Projects' areas. This information may be provided with the draft plans that GLHA files in accordance with AIR #3, and should include:
- (A) a discussion of the potential project-related effects (i.e., seasonal vegetation management including transmission line right of way maintenance, use of pesticides; and project-related recreation activities) on the tricolored bat;
 - (B) a description of any existing or proposed tree removal activities, which includes cutting down, harvesting, destroying, trimming, or manipulating of trees, saplings, snags, or any other form of woody vegetation likely to be used as summer roosting and foraging habitat within the projects' boundaries;
 - (C) a description of any known hibernacula or maternity roost trees within or adjacent to the project boundaries; and
 - (D) any measures that would be implemented for the protection of all listed bats in the project boundary.

¹⁷ 87 Fed. Reg. 56,381-56,393 (September 14, 2022).

P-2572-141 and P-2458-273
Schedule A

Recreation Resources

23. Table 6.10-26, on page E-571 of Exhibit E of the FLA, shows statistics on the monthly, recreation season, and annual flows for the West Branch downstream from Stone Dam. To assist Commission in evaluating the recreational benefits of spill flows in the reach downstream from Stone Dam, please provide an update of table 6.10-26 that includes columns for the percentage of time that 700 cfs and 2,000 cfs are exceeded on a monthly, recreation season, and annual basis.

Exhibit F – Supporting Design Report

24. Exhibit H of the application includes a Supporting Design Report (SDR) for the East Millinocket Development of the Penobscot Mills Project but does not include an SDR for the remaining four developments. So that staff can assess whether existing and proposed project structures are safe and adequate to fulfill their stated functions, please provide an SDR for the four remaining developments (North Twin, Millinocket, Dolby, and the Millinocket Lake Storage Developments) within **150 days** of this letter, which, at minimum, includes the following supporting information:

- (A) An assessment of the suitability of the site and the reservoir rim stability based on geological and subsurface investigations, including investigations of soils and rock borings and tests for the evaluation of all foundations and construction materials sufficient to determine the location and type of dam structures suitable for the dam site;
- (B) Copies of all boring logs, geology reports and laboratory tests reports;
- (C) An identification of all barrow areas and quarry sites and an estimate of required quantities and suitable construction material;
- (D) Stability and stress analyses for all major structures and critical abutment slopes under all probable loading conditions, including seismic and hydrostatic forces induced by water loads up to the Probable Maximum Flood as appropriate; and
- (E) The basis for determination of seismic loading and the Spillway Design Flood in sufficient detail to permit independent staff evaluation.

If the report contains preliminary drawings, it must be designated a “Preliminary Supporting Exhibit Report.”

Document Content(s)

P-2572-141 and P-2458-247 AIR letter.pdf.....1