



United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
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March 27, 2026

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FERC e-File

**RE: Carthage Mill (West End) Hydroelectric Project (Project No. 5800)
Low Impact Hydropower Institute Application**

Dear Maryalice Fischer:

The U.S. Fish and Wildlife Service (Service) has reviewed the November 26, 2025, Low Impact Hydropower Institute (LIHI) Application (Application) by Northbrook Carthage LLC (Exemptee), a wholly owned subsidiary for Relevate Power LLC, for the Carthage Mill (West End) Hydroelectric Project (Project No. 5800) (Project) located on the Black River, Jefferson County, New York. We submit the following comments on the Project under review for LIHI regarding upstream and downstream fish passage, the provision of minimum flows, Project operations, and potential impacts to endangered species at the site.

Project Background

The Project is located on the Black River in Carthage, New York, immediately downstream of the Carthage Paper Makers Mill Hydroelectric Project (Project No. 10881), the Tannery Island Hydroelectric Project (Project No. 4908), and the Long Falls Hydroelectric Project (Project No. 4636). The Project impoundment is the tailrace of the Tannery Island Project. The 5-megawatt Project consists of the following: 1) an approximately 1,300-foot-long dam with an uncontrolled spillway with six 8-inch-deep notches of varying length¹ and a non-overflow concrete wall section; 2) an 8-foot by 8-foot sluice gate; 3) an impoundment covering 13 acres at elevation 702.7 feet mean sea level and having a storage capacity of 53 acre-feet; 4) an intake structure with two trashrack sections measuring 21-feet-long and 40-feet-wide, with a clear spacing of 3.5 inches; 5) a concrete powerhouse containing a 2.6-megawatt Kaplan unit with a maximum

¹ Three 21-ft-long notches; one 15-ft-long notch, one 31-ft-long notch and one 21-ft, 6-in-long notch.

hydraulic capacity of 1,990 cubic feet per second (cfs) and a 2.4-megawatt Kaplan unit with a maximum hydraulic capacity of 1,940 cfs; and 6) appurtenant facilities. The Project provides the following minimum flows: at Channel 1 (ice sluice), a 91-cfs minimum flow is released at all times, and a 200-cfs minimum flow is released from March 15 to May 15 for Walleye spawning; at Channel 2 and 3 (minimum flow notches), 79-cfs and 27-cfs minimum flows are released at all times, respectively. There are no upstream fish passage facilities at the Project.

The Project was issued an exemption from licensing by the Federal Energy Regulatory Commission (Commission) on June 7, 1982, reinstated on July 11, 1983,² and amended March 14, 1995.³ Standard Article 2 requires the Exemptee to comply with all conditions set by the Service. The Department of the Interior provided the Service's conditions in a letter dated April 9, 1982. The Project was issued its exemption prior to the regulations contained with the 1986 Electric Consumers Protection Act that required the Commission to give equal consideration to power and non-power values of a waterway. As such, and due to the nearly 40-year advancement in hydropower-related mitigation measures and science, there are several impacts to natural environment at the Project that, to our knowledge, were not adequately studied, do not reflect our current guidance, and are not protective of the natural resources or management goals in the Black River. Other hydroelectric projects in the Black River are currently undergoing relicensing, where the Service is working to address similar issues; however, the Project's exempt status has not afforded the public and resource agencies this opportunity.

Fisheries

The Black River is managed by the New York State Department of Environmental Conservation (NYSDEC) as a mixed warmwater and coolwater fishery. Common species in the vicinity of the Project include Walleye (*Sander vitreus*), Smallmouth Bass (*Micropterus dolomieu*), Northern Pike (*Esox lucius*), Rock Bass (*Ambloplites rupestris*), Yellow Perch (*Perca flavescens*), and Chain Pickerel (*Esox niger*). The NYSDEC manages the lower Black River for lake-run salmonids including: Steelhead (*Oncorhynchus mykiss*), Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*Oncorhynchus kisutch*), and Brown Trout (*Salmo trutta*). Sea Lamprey (*Petromyzon marinus*) occur in Lake Ontario, and the lower Black River is treated to control this species. The catadromous American Eel (*Anguilla rostrata*) is native to the Black River and is a primary species of concern. Eels have been documented near and above the Project,⁴ although due to the lack of eel-specific passage at the dams in the lower river, these collections are infrequent. The Project is located 20 river miles upstream of the Beebe Island Hydroelectric Project (Project No. 2538), which is located at the natural upstream barrier for most fish species, except American Eel.

Comments

1. The Service is engaged in a long-term, basin-wide effort, in collaboration with the NYSDEC, to restore the American Eel to its historic range on the Black River through eel passage and protection at hydroelectric projects. The best available science indicates that the American Eel population at the Project is currently small. However, the Service reasonably expects an

² 24 FERC ¶61,021.

³ 70 FERC ¶62,165.

⁴ FERC Accession No: 20240808-5092, page 9.

increased occurrence of American Eel in the vicinity of the Project as the Service continues to address American Eel passage and protection in the lower Black River.^{5,6} Upstream, the Carthage Paper Makers Mill Project is currently undergoing the Commission's surrender process and has a breached dam. Since efforts are underway to improve eel passage at downstream hydroelectric projects and the upstream dam is breached, the Service believes it is appropriate to begin planning eel passage and protection facilities at the Project and the Tannery Island Project.

2. The Project currently does not provide upstream passage for American Eel that may be attempting to move upstream of the Project. Based on the limited records upstream of the Project, we expect upstream passage occurs infrequently. The Service generally recommends that well-sited, eel-specific, upstream passage facilities be provided at hydroelectric projects.
3. The Service understands that downstream fish passage is possible through the notches on the spillway. However, the Project was constructed before the Service's Fish Passage Engineering Design Criteria⁷ were developed, which contain our science-based recommendations for the provision of downstream fish passage and protection for fishways at hydroelectric projects. It is unclear whether the notches on the spillway provide safe, timely, and effective downstream passage for fish in accordance with our criteria. The Service generally recommends a downstream passage facility in the vicinity of the intake to provide a safe route around the intakes that meet a variety of criteria including a safe plunge pool with at least one foot of depth for every four feet of drop and an attraction flow of five percent of the hydraulic capacity of the intake.
4. The Project currently has trashracks with 3.5-inch clear spacing, which do not provide protection for any fish species, particularly American Eel. The Service generally recommends a trashrack with a clear spacing of 0.75 inches to exclude American Eels from entrainment, which would also be protective of the adult fish of most other fish species in the vicinity of the Project. American Eel predominantly follow bulk flow during out-migration, and currently any fish species that manage to migrate upstream of the Project can be entrained and subject to an unknown degree of injury and mortality.
5. The Application indicates that the approach velocities at the intakes are 2.34 feet per second (fps). The Service generally recommends that hydroelectric projects have intake velocities below 2 fps in order to limit impingement and entrainment.
6. Article 2 of the Project's Exemption Order does not require minimum flows over the dam. However, in an agreement with the NYSDEC, the Exemptee has agreed to provide minimum flows sufficient to support dissolved oxygen levels downstream and aquatic habitats. Because the minimum flows are not required by the Commission's Exemption Order nor a

⁵ The Service is addressing eel passage and protection at the Beebee Island Project and five hydroelectric developments of the Black River Hydroelectric Project (Project No. 2569), which are both currently relicensing.

⁶ The Service has requested an American Eel siting study at the Dexter Hydroelectric Project (Project No. 2695), the first dam on the Black River (FERC Accession No. 20251222-5073). The Service plans to submit draft modified terms and conditions for eel passage and protection at the Dexter Project by the first quarter of 2027.

⁷ U.S. Fish and Wildlife Service. 2019. Fish Passage Engineering Design Criteria. Please contact our office for this document.

NYSDEC Water Quality Certification, there is no compliance requirement for ensuring the flows are consistently and continuously provided throughout the year at the Project.

7. The Application describes Project operations as run-of-river; however, the methods utilized to achieve run-of-river are not defined, and we are not aware of any data to support the degree to which the Project operates in a run-of-river mode. Additionally, we are not aware of any plans or guidance documents at the Project where these measures would be required.
8. It is our understanding that the Project currently does not have any mitigation measures for the federally endangered Indiana Bat (*Myotis sodalis*) or federally endangered Northern Long-eared Bat (*Myotis septentrionalis*). The Service generally recommends the development of a species protection plan to limit the impacts of tree clearing or other Project-related construction and maintenance activities to these species during feeding, breeding, and roosting periods.

Recommendations

As described above, there are several issues with fish passage, the provision of minimum flows, available operations data, and endangered species protection at the Project that should be addressed prior to LIHI considering this Project for certification. It is our understanding that LIHI processes applications for certification based on “meeting the latest and most stringent science-based recommendation of the relevant state or federal resource agencies whose mandates are to protect the resources relevant to a criterion.” We do not believe that the Project meets Standard 1 “Not Applicable/De Minimis Effect” for the Upstream Fish Passage, Downstream Fish Passage, or Threatened and Endangered Species Criteria. Additionally, although the Exemptee provides minimum flows in an agreement with the NYSDEC, we do not believe that the Project meets Standard 2 “Resource Agency and Tribal Government Recommendation” for the Ecological Flow Regime Criterion since it is not currently required on a continuous basis or formalized within an Operations and Compliance Monitoring Plan. Therefore, we recommend that LIHI require Exemptee to carry out the following recommendations prior to certification:

1. Develop a plan and schedule to implement upstream American Eel passage at the Project in consultation with and approved by the Service and the NYSDEC. The plan should include a reasonable timeline to carry out the following at the Project: a two-year American Eel siting study plan to determine a suitable location(s) for eel ladders, the installation and operation of eel ladder(s), the provision of engineering design drawings for any approved eel ladder(s), the development of a Fishway Operations and Maintenance Plan (FOMP),⁸ and an effectiveness testing study plan for the eel ladder(s).
2. Evaluate the downstream fish passage and protection facilities at the Project (i.e., the notches on the spillway and the trashracks) and provide a report to the Service and the NYSDEC regarding whether the Project currently meets the Service’s 2019 Fish Passage Engineering Design Criteria for providing safe, timely, and effective downstream passage for American

⁸ The FOMP should be developed in consultation and approved by the Service and NYSDEC, which would include annual reporting in a Fishway Operations and Maintenance Report in order to ensure that the upstream fishway is well-operated and repaired as necessary to provide safe, timely, and effective passage.

Eel and other resident fish. Any additional engineering designs or studies would be recommended based on the results of this report.

3. Require the provision of the following minimum flows at the Project: at Channel 1 (ice sluice), 91-cfs minimum flow at all times, and 200-cfs minimum flow from March 15 to May 15 for Walleye spawning; at Channel 2 and 3 (minimum flow notches), 79-cfs and 27-cfs minimum flows at all times, respectively.
4. Provide a summary of operational data including generation, headpond and tailwater elevations, and release discharge data. The data should cover the last 5 years and be provided in electronic format at 15-minute intervals. The Service will utilize these data to evaluate compliance with run-of-river operating requirements at the Project.
5. Develop an Operations and Compliance Monitoring Plan in consultation with and approved by the Service and the NYSDEC in order to determine the measures necessary to provide run-of-river operation and consistent downstream and minimum flows.
6. Develop a Bat Protection Plan in consultation and approved by the Service and the NYSDEC.

Regulatory Authority

We are aware that our recommendations and any requirements from LIHI may necessitate the Exemptee to request the Commission to amend the exemption for the Project. The Service reserved our rights to require the Exemptee to implement modifications to environmental measures, including fish passage, in our Article 2 requirements for the Project. Specifically, the Department of the Interior submitted the following Article 2 requirements for the Project in the April 9, 1982, letter:

1. The Exemptee shall, for the conservation and development of existing fish and wildlife resources, operate the Project in a run-of-the-river mode such that the instantaneous downstream flow from the project, including spillage, is equal to the inflow to the project impoundment.
2. When adequate flows for power generation are not available, then all flow should be passed over the spillway. When river flows exceed the maximum hydraulic capacity of the project, then all excess flow should be passed over the spillway.
3. The Exemptee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operations, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any state in which the project or a part thereof is located, after notice and opportunity for hearing.
4. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the

Exemptee shall permit the United States or its designated agency to use, free of cost, such of the Exemptee's lands and interests in lands, reservoirs, waterways, and Project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Exemptee shall modify the project operations as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under provisions of this condition. This condition shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Exemptee of any obligation under this license.

5. So far as is consistent with proper operation of the project, the Exemptee shall allow the public free access, to a reasonable extent, to Project waters and adjacent Project lands owned by the Exemptee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting; provided, that the Exemptee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Summary

Herein, we have identified specific recommendations for consideration by the LIHI, under our existing authorities, and also pertinent to the evaluation criteria utilized by the LIHI in determining whether the Project meets the criteria for certification. We respectfully request that certification not be issued without these requirements included. We are also available to the Exemptee to further discuss these recommendations as they pursue their LIHI certification and continue to operate the Project. This letter has been filed with the Commission in order to provide documentation of our recommendations and current concerns with the Project for their awareness and action, as appropriate.

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Thank you for the opportunity to provide our comments and recommendations on the Application for LIHI certification at the Project. If you have any questions or desire additional information, please contact Arianna Ramirez at arianna_ramirez@fws.gov or John Wiley at john_wiley@fws.gov or 607-753-9334.

Sincerely,

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