



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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June 5, 2023

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FERC e-File

**RE: Dexter Hydroelectric Project (FERC No. P-2695)
Low Impact Hydropower Institute Application**

Dear Mary Alice Fischer:

The U.S. Fish and Wildlife Service (Service) has reviewed the February 2023 Low Impact Hydropower Institute (LIHI) Application (Application) by Hydro Development Group Acquisition, LLC (HDG) for the Dexter Hydroelectric Project (FERC No. P-2695) (Project) located on the Black River, Jefferson County, New York. We received a request for comment and questions from the Application reviewer, Patricia McIlvaine, via electronic mail on April 26, 2023. The Service discussed the Application with the New York Department of Environmental Conservation (NYSDEC) on April 26, 2022, and May 4, 2022. We have significant concerns with the Project being considered for LIHI Certification due to our shared concerns with the NYSDEC regarding upstream and downstream passage, the provision of aquatic flows, and impacts to endangered species at the Project

Project Background

The Project consists of: 1) three reinforced concrete gravity type dams, one 12-foot-high and 141.5-foot-long, one 8-foot-high and 145-foot-long, and one 12-foot-high and 433-foot-long, each surmounted with flashboards; 2) an impoundment covering 120 acres at elevation 262.5 feet mean sea level and having a storage capacity of 120 acre-feet; 3) three existing powerhouses containing six units with a total capacity of 4,325 kilowatts and all operating under a head of 14 feet; 4) a 2.3-kV, 450-foot-long transmission line; and 5) appurtenant facilities. The Project is the first barrier on the Black River and has a vertical slot upstream fishway designed to pass Walleye (*Sander vitreus*) and salmonid fish species. There are no downstream passage facilities at the Project, and the existing trashracks range from 1.33 to 2-inch clear-spacing.

The Project was issued an exemption from licensing by the Federal Energy Regulatory Commission (Commission) on, June 4, 1982, amended August 5, 1986. Standard Article 2 requires HDG to comply with all conditions set by the Service and NYSDEC. The Department of the Interior provided our conditions in a letter dated October 30, 1981, and the NYSDEC, by letter dated August 31, 1981. The Department of the Interior provided additional requirements in our March 18, 1986, letter on the amendment. 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 NYSDEC as a mixed warmwater and coolwater fishery. Common species in the vicinity of the Project include Walleye, Smallmouth Bass (*Micropterus dolomieu*), Northern Pike (*Esox lucius*), Rock Bass (*Ambloplites rupestris*), Yellow Perch (*Perca flavescens*), and Chain Pickerel (*Esox niger*). The catadromous American Eel (*Anguilla rostrata*) is a primary species of concern. Additionally, 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*). Lake Sturgeon (*Acipenser fulvescens*) are known to occur below the Project. It is our understanding that Lake Sturgeon are not managed upstream of the Project. Sea Lamprey (*Petromyzon marinus*) occur in Lake Ontario, and the lower Black River is treated to control this species.

The Project is located 4.0 miles downstream of the Glen Park Hydroelectric Project (FERC No. P-4796), which has upstream and downstream fish passage and protection, and 9.5 miles downstream of the Beebee Island Hydroelectric Project (FERC No. P-2538), which is located at the natural upstream barrier for most fish species, except American Eel. American Eel have been documented several times above the Project^{1,2,3}, although due to the lack of eel-specific passage at the dams in the lower river, these collections are infrequent. Restoration of American Eel in the watershed is a goal of the Service and the New York State Department of Environmental Conservation.

¹ See reference to the 1993 record above the Glen Park Hydroelectric Project and reference to the 2018 record in the Deer River, FERC Accession No. 20220408-5274

² See reference to the 1996 record above the Black River Hydroelectric Project (FERC No. P-2569), Herrings development and 2022 record in Cold Brook above the Watertown Hydroelectric Project (FERC No. P-2442), FERC Accession No. 20220506-5167.

³ See 2022 record above the Black River Hydroelectric Project, Herrings development, FERC Accession No. 20220801-5254

Comments

1. The Service conducted a site inspection at the Project in 2017; however, HDG does not have any existing requirements to report to the Service or the NYSDEC regarding the operation, maintenance, and annual effectiveness of the upstream fish ladder at the Project. It is our understanding that the NYSDEC does not actively manage the upstream fish ladder, and we are not aware of any current operational protocols by HDG.
2. The Service understands that under spill conditions, some degree of passage is possible at the river left spillway abutment and that salmonids, lamprey, and other species, likely pass the Project to an unknown degree in this way. However, we do not consider this an appropriate means of upstream passage as this method of passage generally occurs only under limited conditions and with relatively high velocities associated with spill conditions.
3. The Service requested the design drawings for the upstream fish ladder at the Project in conjunction with our 2017 site visit; however, it is our understanding that there are no existing drawings of the upstream fish ladder.
4. The Service is not aware of any effectiveness testing that was conducted after construction to determine whether the upstream fish ladder provides safe, timely, and effective passage for the fish species at the Project. As such, it is unknown how well the upstream fish ladder performs for the passage of the fish species at the Project.
5. The Project exemption was issued before the Service's 2019 Fish Passage Engineering Design Criteria⁴ document was issued. This document contains our science-based recommendations for the provision of both upstream and downstream passage and protection for fishways at hydroelectric projects.
6. The Service understands from our inspection in 2017, and discussion with the NYSDEC, that the upstream exit of the fishway is controlled by a wide top-opening gate. As such, in order to limit the total flow through the fishway and prevent overtopping, the gate may be operated only four inches above the exit sill. This height is less than our recommended exit depth of at least two times the body depth of the design fish species. The exit velocities may also be above our recommend 1.5 feet per second (fps) due to this narrow opening.
7. The NYSDEC has indicated that the ladder may have maintenance needs including repair of the upstream exit gate control motors.
8. The entrance to the ladder contains a lamprey barrier; however, the operation and effectiveness of this barrier is unknown. Lamprey control is already occurring upstream of the Project, and the lamprey barrier may be inhibiting the movement of other species by creating a vertical and velocity barrier at the entrance to the fishway.
9. The Project currently does not provide upstream passage for American Eel that may be attempting to move upstream or downstream past the Project. Eels that occur in Lake

⁴ U.S. Fish and Wildlife Service. 2019. Fish Passage Engineering Design Criteria. Please contact our office for this document.

Ontario and the Lower Black River are, on average, 16 inches in length,⁵ and eels of this size class are able to use pool-and-weir fishways if the conditions within them is within their swimming ability.⁶ Eels have been documented using similar technical fishways at other hydroelectric facilities^{7,8,9}; however, the existing vertical slot upstream fishway is not designed for the passage of American Eel. 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.

10. The Project does not provide downstream passage or protection for any species, particularly for salmonids and American Eel. The Service recommends a trashrack spacing of 0.75-inch to exclude American Eels from entrainment, which would also be protective of the salmonids and adult fish of most other fish species in the vicinity of the Project. Salmonids and 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. Additionally, the Service 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.
11. The Application indicates that the approach velocities at the intakes are unknown; however, the Service recommends that hydroelectric projects have intake velocities below 2 fps in order to limit impingement, if narrow-spaced trashracks are present, and entrainment.
12. The Application describes Project operations as run-of-river (ROR); however, the methods utilized to achieve ROR 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.
13. The Application indicates that no environmental flows are currently required at the Project. We are not aware of any studies or habitat assessments of the bypassed reaches at the Project, particularly at dams 17 and 18 as indicated in the Application, that would justify a lack of environmental flows.
14. 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

⁵ The average length of eels observed moving upstream through the eel ramps at the St. Lawrence – FDR Hydroelectric Project (Project No. P-2000) in 2020 was 16.4 inches.

⁶ Atlantic States Marine Fisheries Commission. 2010. *Upstream Fish Passage Technologies for Managed Species*. pp. 15-16. https://www.asmf.org/uploads/file/FishPassTechnologyForASMFCspecies_Oct2010.pdf.

⁷ Eels were observed using a pool-and-weir fishway on the St. Croix River in Maine: LimnoTech. 2021. *Exploring Upstream and Downstream Fish Passage Improvements on the Lower St. Croix River*. International St. Croix River Watershed Board and Workgroup. https://www.ijc.org/sites/default/files/St.Croix_Fish_Passage_Study_2019.pdf.

⁸ Eels were observed using a vertical slot fish ladder on the Dordogne River in France: Solomon D.J. and Beach M.H. 2004. *Fish Pass design for Eel and Elver (Anguilla anguilla)* (R&D Technical Report W2-070/TR1). http://www.environmentdata.org/archive/ealit:4662/OBJ/90768_ca_object_representations_media_399_original.pdf.

⁹ Eels were observed using vertical slot fish ladders on the Lehigh River in Pennsylvania: U.S. Fish and Wildlife Service (personal communication, J. Morales, USFWS, March 23 and 29, 2022).

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. Notably, one of the largest hibernaculum for the Indiana Bat is located approximately four miles upstream.

Recommendations

The Application notes that HDG has complied with the conditions set forth by the Service and the NYSDEC in 1981 and 1986; however, as described above, there are several issues with the fish passage, environmental flows, endangered species protection, and available data 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 HDG’s determination that they meet Standard 1 “Not Applicable” or Standard 2 “Agency Recommendation” is appropriate for the Upstream Fish Passage, Downstream Fish Passage, Ecological Flows, or Threatened and Endangered Species Criteria. Therefore, we recommend that LIHI required HDG to carry out the following recommendations prior to certification:

1. Develop a Fishway Operations and Maintenance Plan (FOMP) in consultation and approved by the Service and NYSDEC, which would include annual reporting in a Fishway Operations and Maintenance Report (FOMR) in order to ensure that the upstream fishway is well-operated and repaired as necessary to provide safe, timely, and effective passage.
2. Provide the Service and the NYSDEC with current as-built engineering drawings of the existing upstream fishway. If engineering drawings do not exist, a new survey should be conducted to provide the information necessary to complete new drawings.
3. Evaluate the existing upstream fishway utilizing the Service’s 2019 Fish Passage Engineering Design Criteria and provide a report to the Service and the NYSDEC to determine: 1) the degree to which the fishway deviates from these criteria; 2) recommended measures to address any deficiencies; and, 3) any effectiveness testing necessary in order to assess the performance of the ladder for safe, timely, and effective passage for salmonids and Walleye. Any additional engineering designs, upstream fish ladder modifications, or studies would be recommended based on the results of this report.
4. Develop a one-year American Eel siting study plan in consultation with and approved by the Service and NYSDEC to determine a suitable location(s) for eel ladders at the Project.
5. Provide engineering design drawings for the approved eel ladder(s) at the Project developed in consultation and approved by the Service and the NYSDEC.
6. Develop an effectiveness testing study plan for the eel ladder(s) in consultation and approved by the Service and NYSDEC.
7. Evaluate the potential for downstream fish passage and protection facilities utilizing the Service’s 2019 Fish Passage Engineering Design Criteria and provide a report to the Service

and the NYSDEC to provide safe, timely, and effective downstream passage for American Eel, salmonids, Walleye, and other resident fish. Any additional engineering designs or studies would be recommended based on the results of this report.

8. 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 ROR operating requirements at the Project.
9. Develop an Operations, Compliance, and Monitoring Plan in consultation with and approved by the Service and the NYSDEC in order to determine the measures necessary to provide ROR operation and consistent downstream and minimum flows.
10. Develop a bypassed reach flow study plan, in consultation with and approved by the Service and the NYSDEC in order to evaluate the habitats and resources in the Projects bypassed reach and the suitability of different environmental flows in these reaches. Any recommendations for bypassed reached flows would be provided based on the results of this report.
11. Develop a Bat Protection Plan in consultation and approved by the Service and NYSDEC.

Regulatory Authority

We are aware that our recommendations and any requirements from LIHI may necessitate HDG to request the Commission to amend the exemption for the Project. The Service and the NYSDEC reserved our rights to require HDG to implement modifications to environmental measures, including fish passage, in our Article 2 requirements for the Project. Specifically, the Service reserved our authority to require HDG to:

1. Operate the project in a ROR mode, such that the instantaneous downstream flow from the Project, including spillage, releases, and/or leakage, is equal to the inflow to the Project impoundment.
2. At its expense, design and make operative structures and procedures to enable anadromous fishes to migrate upstream and, if necessary, downstream past the Project works, if so notified by the Service and approved by the Commission.
3. Ensure that the design, location, installation, maintenance, repair and operation of structures necessary for the upstream, and if necessary, downstream migration of fishes past the Project conform to the specification of and are satisfactory to the Service.
4. Permit personnel of the Service or its representatives to inspect all of the aforementioned fishway and Project records pertaining to the construction, operation and maintenance thereof, for the purposes of determining compliance with the aforementioned prescriptions and their effectiveness in protection, restoring, and enhancing fish populations, provided such inspections do not pose a significant threat of injury or damage to personnel or property at the Project.

5. Investigate and document in a report the effectiveness of the aforementioned structures and procedures in providing for the safe and efficient passage of anadromous fishes.¹⁰

And the NYSDEC reserved their authority to require HDG to:

1. Prepare studies and make whatever reasonable modifications are necessary to alleviate any future adverse impacts upon the resources that can be directly attributed to the existence and operation of the Project.
2. Construct and maintain such fish passage facilities and comply with such reasonable modifications to the operation of the Project as may be required to assure the conservation and development of fish and wildlife resources that have been identified with this Project.

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 HDG 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 John Wiley at john_wiley@fws.gov or 607-753-9334.

Sincerely,

Ian Drew
Field Supervisor

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¹⁰ This report was required to be provided within two years of installation, and as reflected in our comments above, we are not aware of any effectiveness testing done at the Project.

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