

REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE OF THE SHERMAN ISLAND PROJECT

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September 30, 2020

I. INTRODUCTION

This report summarizes the review findings of the application submitted by Erie Boulevard Hydropower, LP (Applicant or licensee) a subsidiary of Brookfield Renewable Energy Group to the Low Impact Hydropower Institute (LIHI) for certification of the Sherman Island Hydroelectric Project FERC (part of P-2482). Sherman Island Hydroelectric Project (Project) is a 39.46 MW pulsing facility located on the Hudson River in towns of Moreau and Queensbury, New York. The Project is the downstream development that together with the upstream Spier Falls Development make up the Hudson River Project. On August 3, 2020 LIHI received a complete application package for certification of the Project. This current review was made using the new 2nd Edition LIHI Certification Handbook (Revision 2.04, April 1, 2020).

II. PROJECT'S GEOGRAPHIC LOCATION

The Project is located at river mile (RM) 209 on the Hudson River in Saratoga and Warren Counties, New York and is the 12th dam upstream of the Hudson River mouth. The Green Island Dam is the most downstream dam on the Hudson River, located at RM 149 and marks the upstream extent of the Hudson River estuary. Several dams are located both upstream and downstream of the Project (Figure 1). The Feeder Dam Project (LIHI #164) is located just downstream at RM 203.

III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

The Sherman Island Development was constructed in 1923 and includes (see Figures 2 - 5): (1) a 949-foot-long buttressed and gravity dam with a spillway and a maximum height of 38 feet at the spillway section and 67 feet at the non-overflow section; (2) a reservoir with a 305-acre surface area; (3) a forebay; (4) an intake structure with a power canal and 15 penstocks; and (5) a powerhouse with five vertical Francis turbine/generators. Each unit has a design capacity of 11,450 hp at design head of 66 feet, a turbine speed of 150 rpm, and a maximum and minimum capacity of 2,090 cfs and 880 cfs, respectively.

The minimum flow powerhouse has a single unit with a design capacity of 1,675 hp at design head of 54 feet and a speed of 514 rpm. The maximum and minimum capacity of the unit is 314 cfs and 250 cfs respectively. The development has a 4,000-foot bypassed reach between the dam and the main powerhouse. Water from the powerhouse is discharged directly into the backwater of the Feeder Dam (FERC Project No. 2554) reservoir.

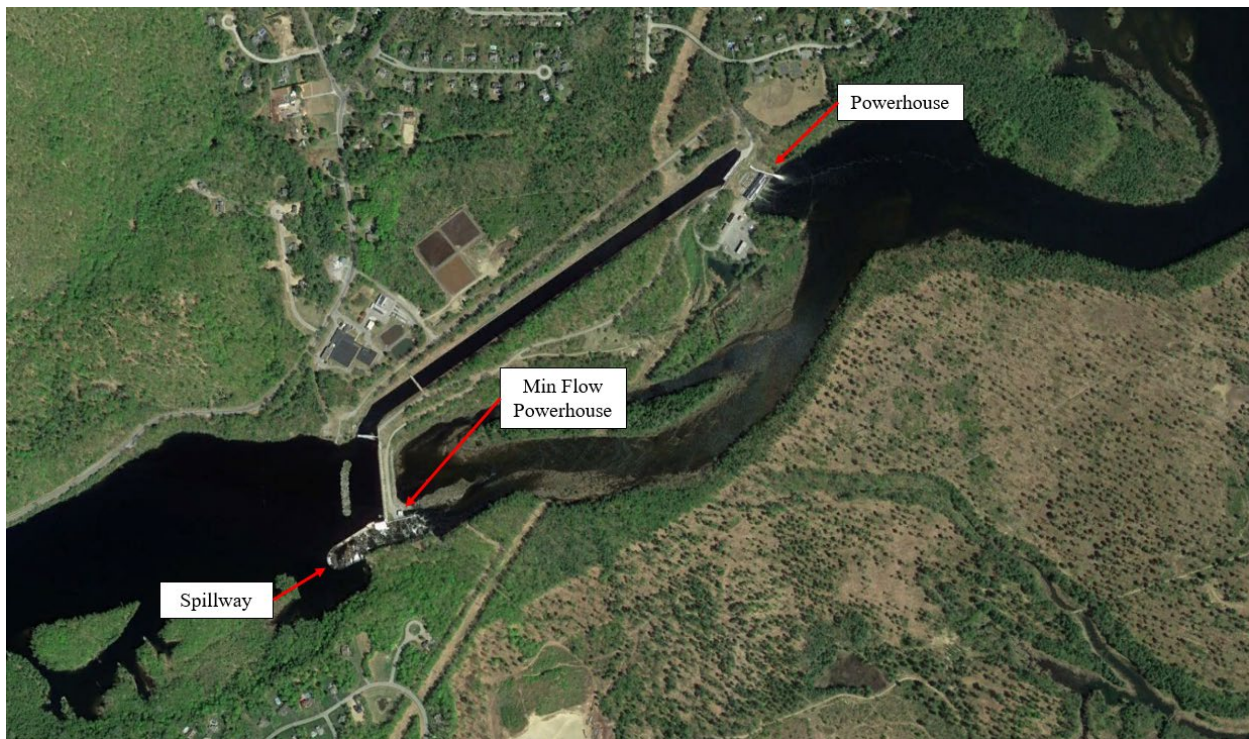


Figure 2 – Sherman Island Hydroelectric Facility



Figure 3 – Sherman Island Spillway



Figure 4 – Sherman Island Bypass Reach and Minimum Flow Powerhouse



Figure 5 – Sherman Island Power Canal, Main Powerhouse, and Tailrace

IV. ZONES OF EFFECT AND STANDARDS SELECTED

Three Zones of Effect (ZOE) were designated by the Applicant and were determined to be appropriate. Zone 1 is the impoundment zone and extends from the tailrace of the upstream Spier Falls Development downstream approximately 3.5 miles to the Sherman Island dam and includes the power canal. The Zone 2 bypass reach contains the North and South channels and extends from the Sherman Island spillway to the confluence with the tailrace. The Zone 3 tailrace extends from the main powerhouse tailrace downstream approximately 0.1 miles to the Feeder Dam Impoundment (Figure 6). Table 1 shows the Standards selected for each criterion for the three ZOE. Where applicable, reviewer recommendations for alternate standards are shown in **red**.

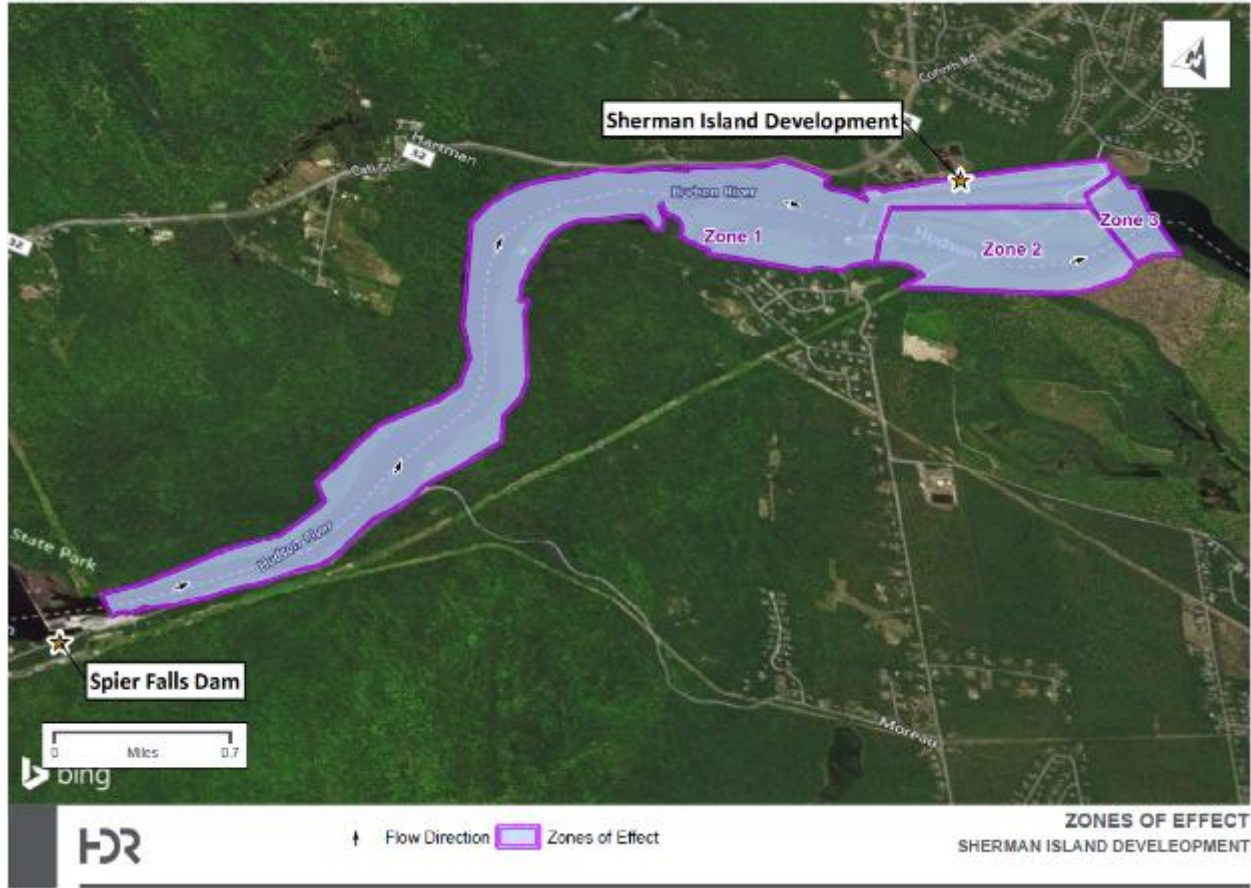


Figure 6 – Sherman Island Hydroelectric Development Zones of Effect.

Table 1. Standards Matrix for the Sherman Island Development.

Zone:		1: Impoundment	2: Bypassed Reach	3: Downstream Reach
River Mile Extent:		RM 209.4 to RM 212.9	RM 208.6 to RM 209.4	RM 208.5 to RM 208.6
Criterion		Standard Selected	Standard Selected	Standard Selected
<i>A</i>	Ecological Flows	1	2	2
<i>B</i>	Water Quality	2	2	2
<i>C</i>	Upstream Fish Passage	1	2	2
<i>D</i>	Downstream Fish Passage	2	2	1
<i>E</i>	Shoreline and Watershed Protection	1, PLUS	1, PLUS	1, PLUS
<i>F</i>	Threatened and Endangered Species	3	3	3
<i>G</i>	Cultural and Historic Resources	2	2	2
<i>H</i>	Recreational Resources	2	2	2

V. REGULATORY AND COMPLIANCE STATUS

The Project was issued a license by FERC in 2002¹ that also incorporated many of the terms and conditions of the Settlement Agreement that the licensee filed with the Commission on April 12, 2000². The terms and conditions of the Settlement Agreement resolved a range of resource use issues that were of concern during the licensing process. New York State Department of Environmental Conservation (NYSDEC) issued a Section 401 Water Quality Certification (WQC) for the Project, subject to certain conditions, on February 12, 2002³. On June 8, 2006, Erie filed an application to amend its license to reflect upgrades and new turbines. On September 29, 2006, the NYSDEC amended its February 5, 2002 certification as it related to the licensee’s proposed changes. FERC subsequently approved the amendment application on April 24, 2007 which incorporates the amended WQC⁴.

¹ <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=9567157>

² <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8052866>

³ <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8310660>

⁴ <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=11316932>

VI. PUBLIC COMMENT RECEIVED OR SOLICITED BY LIHI

The application was posted for public comment on August 3, 2020 and the notice was forwarded to agencies and stakeholders listed in the application. The deadline for submission of comments was October 2, 2020. No formal comments were submitted. Based on the completeness of the application and documents available on the FERC elibrary, I did not need to contact resource agencies.

VII. DETAILED CRITERIA REVIEW

A. ECOLOGICAL FLOW REGIMES

Goal: The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.

Assessment of Criterion Passage: The Applicant has appropriately selected Standard A-1, Not Applicable/De Minimis Effect for Zone 1, and Standard A-2, Agency Recommendation for Zones 2 and 3.

The Project operates in a pulsing mode as a regulating project with seasonal fluctuations. The Sherman Island impoundment has a usable storage volume of 610 acre-feet. In accordance with section 6.1.2 of the Project's 2000 Settlement Agreement, WQC Condition 7, and Article 403 of the 2002 FERC License Order, Erie operates the Sherman Island Development with a 1-foot daily impoundment fluctuation limit (between elevation 352.3 and 353.3 feet NGVD) during walleye spawning from about March 15 until June 15 of each year. During the remainder of the year, daily impoundment fluctuations are limited to 2 feet (between elevation 351.3 and 353.3 feet NGVD). The 2001 FERC Final Environmental Impact Statement (EIS)⁵ noted that the results of impoundment fluctuation studies conducted by the licensee demonstrated that reducing the impoundment fluctuations to the above limits should have a substantial benefit for aquatic resources compared to pre-licensing conditions. The total acreage of shoreline habitat exposed daily during pre-licensing operating conditions was estimated at 19.8 acres during the typical 3.7 foot daily fluctuations and 41.8 acres during the seasonal fluctuations of 7.4 feet. In comparison, the 1-foot drawdowns would expose only 5.4 acres and the 2-foot drawdown would expose only 10.5 acres. The Final EIS also noted that walleye reproduction would also be enhanced by the reduction in magnitude of impoundment fluctuations through reducing the possibility of egg stranding in dewatered areas.

License Article 403 also required Erie to install pneumatic flashboards on the straight section of

⁵ <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=8315170>

the spillway near the non-overflow section of the dam to facilitate pond level control to allow the 10-year flood to pass the dam without the remaining wooden flashboard sections failure. On October 12, 2005, Erie filed as-built Exhibit F drawings to show the completed installation of a pneumatic flashboard system. FERC approved the drawings on February 1, 2006⁶.

Article 401 of the license required a Stream Flow and Water Level Monitoring Plan (SFWLMP), be developed to ensure compliance with impoundment fluctuations and base flows. The licensee filed a SFWLMP on July 14, 2003, which was approved by the Commission on July 13, 2004. The licensee modified the Plan to include new information on staff gages, stream flow monitoring, and the feasibility of internet-type posting of elevation and flow records. The final SFWLMP was filed with FERC on May 2, 2005. On July 12, 2005 FERC issued an Order Modifying and Approving the SFWLMP pursuant. As part of the SFWLMP, the licensee is required to monitor headpond elevations. The licensee installed and maintains hydroacoustic sensors to monitor the impoundment. In the last 5 years, there has only been one deviation in the headpond elevation requirements of Article 403⁷. From May 29 - May 30, 2020, the station tripped offline due to inclement weather and the headpond elevation fell below the required 352.3 feet elevation requirement for 16 hours and 43 minutes. The operator repaired the rubber dam and restored communication to the transducer, and the headpond elevation was restored. The lowest elevation recorded during the deviation was 352.2 feet, 0.1 foot below the minimum requirement. FERC concluded that the deviation would not be considered a violation of license Article 403.

WQC Condition 13 states that whenever construction and/or maintenance activities require that the water level of Sherman Island Reservoir be lowered, it shall not be drawn down more than one foot per hour. During refill, the water level of the impoundment shall not be allowed to rise more than one foot per hour. A review of the Project's eLibrary record of the last five years shows Erie has been in compliance with informing FERC of all planned drawdowns.⁸

In accordance with section 6.3.2 of the Settlement Agreement, FERC license Article 405, and WQC Condition 5, Erie releases minimum flows of 100 cfs in the North Channel and 150 cfs in the South Channel of the Sherman Island Development. The year-round minimum flows in the North and South Channels are increased during walleye spawning season so that the combined flows are no less than 675 cfs.

During the FERC licensing process, the licensee performed a habitat enhancement study that utilized instream flow incremental methodology (IFIM) techniques to evaluate alternative minimum flows and channel modifications that could be used to alter the distribution of flow

⁶ [20060201-3017](#)

⁷ [20200609-5142](#)

⁸ [20161102-5003](#), [20170630-170](#), [20180606-5057](#), [20191028-5171](#), [20200714-5049](#)

between the North and South channels or to otherwise enhance habitat conditions. FERC concluded in its 2001 Final EIS that the proposed flow releases would serve to enhance habitat conditions in the bypassed reach for walleye, smallmouth bass, and various forage species.

On June 8, 2006, Erie filed an application with FERC to amend its license to increase the installed capacity of the Sherman Island Development by replacing the turbine runner (Unit 4), and install a new unit in the empty bay (Unit 1) in the existing powerhouse, and to construct a new minimum flow turbine (Unit 6) and associated powerhouse, penstock and tailrace at the dam. The new powerhouse located downstream of the dam contains a 1.16-MW minimum flow unit. On April 24, 2007 FERC approved the amendment application⁹. In 2009 the licensee completed construction of the second powerhouse and minimum flow unit at the downstream toe of the non-overflow spillway of the Sherman Island Dam. On June 18, 2010, the licensee filed a revised SFWLMP to incorporate the way the minimum flow released would be provided¹⁰. The new minimum flow unit releases 250 cfs downstream of the powerhouse, and this flow is diverted by a rock berm so that a 100-cfs flow goes into the North Channel and a 150-cfs flow goes into the South Channel. The 250-cfs discharge from the minimum flow unit is supplemented with flows of 65 cfs from pneumatic flashboards and leakage flow from the wooden flashboards. FERC approved the revised SFWLMP on December 8, 2010¹¹

Based on my review of the application, supporting documentation, and publicly available information, the Project is operated in a manner such that it does not adversely affect fish and wildlife resources under its limited flow regime. As such, the Project satisfies the Ecological Flow Regimes criterion.

B. WATER QUALITY

Goal: Water Quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

Assessment of Criterion Passage: The Applicant appropriately selected Standard B-2, Agency Recommendation for all Zones.

Section C of the WQC requires minimizing water quality impacts during Project maintenance and construction activities through provisions regarding erosion and sediment control, sediment analysis and disposal, dredging, use of cofferdams, maintenance flows, turbidity monitoring and notifications to NYSDEC.

Project waters in Zone 1 are listed as impaired in NYSDEC's 2016 Section 303(d) List of

⁹ [20070424-3017](#)

¹⁰ [20100618-5017](#)

¹¹ [20101208-3028](#)

Impaired Waters Requiring a TMDL/Other Strategy for mercury contaminated sediments, while waters in Zones 2 and 3 are listed as impaired for PCB contaminated sediment. The Hudson River in Zone 1 is classified by NYSDEC as Class A water, that supports drinking water while the waters in Zones 2 and 3 are classified as Class B waters, that support primary and secondary contact recreation and fishing, and they are also suitable for fish propagation and survival. Water quality standards associated with Class A and Class B water are shown in Table 2 below.

Table 2. NYSDEC water quality standards for Class A and Class B Waterbodies.

Physical parameter	Standard
Water Temperature (°C)	For non-trout stream, the water temperature at the surface of a stream shall not be raised to more than 90°F at any point. For lakes, the water temperature at the surface shall not be raised more than 3°F over the temperature that existed before the additional heat of artificial origin.
Dissolved Oxygen (mg/l)	For trout spawning waters the DO concentration shall not be less than 7.0 mg/L from other than natural conditions. For trout waters the minimum daily average shall not be less than 6.0 mg/L, and at no time shall the concentration be less than 5.0 mg/L. For non-trout waters, the minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L.
pH	Shall not be less than 6.5 nor more than 8.5.
Turbidity (NTU)	No increase that will cause a substantial visible contrast to natural conditions
Phosphorus and nitrogen	None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.
Fecal coliform	The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.

In its 2007 Environmental Assessment for the proposed amendment to authorize the base flow powerhouse construction and operation, FERC noted that there may be short-term, minor impacts to water quality due to construction activities, but these would be significantly lessened with the implementation of a sediment and erosion control plan, and the requirements imposed by the revised September 29, 2006 WQC¹².

The impoundment fluctuation limitations and minimum flow releases required by the Settlement Agreement, License Order and WQC along with the FERC-approved SFWLMP minimize the potential for Project operations to impact water quality in all Zones.

The amended WQC stated the Project “will not contravene effluent limitations or other limitations or standards under...the Clean Water Act...provided that all of the conditions listed

¹² [20070424-3017](#)

herein are met.” Erie contacted NYSDEC in February 2020 as part of the LIHI application for confirmation of the status of the WQC and conditions. NYSDEC confirmed the continued validity and ongoing requirements contained within the WQC.

A review of the FERC eLibrary indicated that no issues related to water quality have occurred at the Project.

Based on my review of the application, supporting documentation, and publicly available information, the Project does not appear to impact water quality in the river and satisfies the Water Quality criterion.

C. UPSTREAM FISH PASSAGE

Goal: The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the facility.

Assessment of Criterion Passage: The Applicant appropriately selected Standard C-1, Not Applicable/De Minimis Effect for Zone 1 (Impoundment) and Standard C-2, Agency Recommendation for Zones 2 (Bypassed Reach) and 3 (Downstream Reach).

The Applicant appropriately selected Standard C-1 for the Impoundment Zone since once above the dam there are no facility-related barriers to further upstream passage.

According to the Settlement Offer, the Project waters support a naturally reproducing coldwater/warmwater fishery with northern pike, brown trout, walleye, yellow perch, smallmouth bass, largemouth bass, and rock bass being the more abundant species. The Project waters also support a number of forage fish. The FERC Final EIS notes that surveys conducted in 1984 in the impoundment resulted in the collection of nine species dominated by smallmouth bass, rock bass, yellow perch, pumpkinseed, white sucker, bullhead, and walleye. Surveys in the same year from the bypassed reach resulted in the collection of 13 species, dominated by rock bass, smallmouth bass, yellow perch, longnose dace, pumpkinseed, and walleye. Another impoundment survey conducted in 1989 found 14 species, with collections dominated by bluntnose minnow and pumpkinseed.

There are no anadromous fish species in the Project area and no downstream dams have upstream passage facilities at this time. According to the Settlement Agreement only two American eel were collected from the next downstream Feeder Dam Project (LIHI #164) impoundment in 1984. No mandatory prescriptions (Section 18 or similar) or recommendations for upstream fish passage were required for the Sherman Island Project at the time of licensing .

Article 408 of the FERC license provides the Department of the Interior reservation of its authority to prescribe upstream and downstream fish passage devices in the future. To date upstream fish passage has not been required at the Project – for either development, Sherman Dam or Spier Falls.

Section 8 of the Settlement Offer requires the licensee to contribute to the Fisheries Enhancement Fund and Erie contributes \$5,000 annually (or escalated at the rate of inflation) to the Fund, which may be used for any fishery related projects throughout New York State that meet the following purposes: (1) stream habitat improvement; (2) handicapped fishing access; (3) heritage strain brook trout restoration; or (4) public fishing rights acquisition. In accordance with license Article 410, Erie files annual reports with FERC that describe the amount of money contributed to the Fund (as well as the Great Sacandaga Lake Enhancement Fund and the Hudson/Sacandaga River Enhancement Fund) and which activities were funded during the preceding calendar year, as well as the amount of money contributed during the calendar year of the report. A review of the Project’s record on the FERC eLibrary shows Erie is in compliance with the requirements of license Article 410 and Section 8 of the Settlement Agreement.

Based on my review of the application, supporting documentation, and publicly available information, the Project satisfies the Upstream Fish Passage criterion.

D. DOWNSTREAM FISH PASSAGE AND PROTECTION

Goal: The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by Facility operations. All migratory species are able to successfully complete their life cycles and to maintain healthy populations in the areas affected by the Facility.

Assessment of Criterion Passage: The Applicant appropriately selected Standard D-2, Agency Recommendation for the Impoundment Zone and Standard D-1, Not Applicable/De Minimis Effect for the Downstream Reach Zone. The Applicant also selected Standard D-1 for the Bypassed Reach Zone however this review finds that Standard D-2 is more appropriate for reasons discussed below.

As noted previously in Criterion C - Upstream Fish Passage, the only migratory species in the Project area is the American eel.

As discussed in the 2001 EIS, an entrainment study conducted in 1994 resulted in a catch of 1,799 fish of 30 species, which was extrapolated into an annual estimate of 24,862 fish being entrained. The extrapolated data indicated that the most common entrained taxa were shiners *Notropis* sp. (8,077), rock bass (6,151), pumpkinseed (1,940), rainbow smelt (1,662), yellow perch (1,191) and smallmouth bass (1,091). The total estimated annual turbine mortality was

5,494 fish. The estimated annual turbine mortality for commonly entrained taxa was rock bass, 2,048 fish; *Notropis* sp., 1,453 fish; pumpkinseed, 351 fish; smallmouth bass, 262 fish; yellow perch, 214 fish, and rainbow smelt, 161 fish. Mortality rates for most species and size classes ranged from 6 to 38 percent.

To afford a route for downstream fish passage and minimize the potential for fish to be entrained at the Project, license Article 404 and Section 6.2 of the Settlement Agreement required in part, that Erie modify the ice sluice located adjacent to the main powerhouse as a route for downstream movement and provide a discharge of 25 cfs through the ice sluice, as well as maintain full trash racks overlays at the main powerhouse intake with maximum clear spacing of one inch to protect against fish entrainment. The intake of the minimum flow powerhouse is equipped with ¾-inch clear spaced trashrack spacing. With the one-inch overlays, all but the smallest fishes (minnows and juvenile of carp and game species) would be unable to fit through the clear spacing between the trash rack. During development of the downstream fish passage route design and trash rack design, which FERC approved on September 7, 2006, the U.S. Fish and Wildlife Service (FWS) informed Erie that the trash rack design was acceptable but recommended a correction to the Erie’s table of flow calculations which Erie subsequently incorporated. The NYSDEC agreed that the proposed designs were adequate.

Downstream movement in the Bypassed Reach Zone is facilitated by the minimum flows required by section 6.3.2 of the Settlement Agreement, FERC license Article 405, and WQC Condition 5. As previously noted in Criterion A – Ecological Flow Regime, the licensee performed a habitat enhancement study using IFIM techniques to evaluate bypass reach flows that would enhance habitat conditions. Additionally, FERC concluded in the Final EIS that the proposed flow releases would serve to enhance habitat conditions in the bypassed reach for walleye, smallmouth bass, and various forage species.

The Applicant appropriately selected Standard D-1 for the Downstream Reach Zone because once in this zone there are no Project-related barriers to further downstream movement.

Based on my review of the application, supporting documentation, and publicly available information, the Project satisfies the Downstream Fish Passage and Protection criterion.

E. SHORELINE AND WATERSHED PROTECTION

Goal: The Facility has demonstrated that enough action has been taken to protect, mitigate and enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.

Assessment of Criterion Passage: The Applicant appropriately selected Standard E-1, Not Applicable/De Minimis Effect for all Zones.

There are no lands of ecological significance nor any critical habitats for threatened or endangered species under the Applicant's ownership. The FERC Project boundary covers 265 acres of land and 355 acres of water. The Sherman Island impoundment and tailrace shorelines are steep, forested, and undeveloped. Land use in the vicinity of the Sherman Island Development includes municipal water treatment, industrial, and residential, but the area is largely forested and undeveloped. This area is characterized as a transition zone between the Adirondack State Park and the Hudson lowlands, and therefore the habitat is conducive for such tree species but with a greater prevalence of pine species. Some use around the Project is recreational (see Section VII.H below) and includes fishing, picnicking, camping, and whitewater kayaking/rafting.

The Project does not have, nor is required to have, a specific shoreline or watershed management plan. However as mentioned for Criterion A – Ecological Flow, Erie operates the Sherman Island Development with a one-foot daily impoundment fluctuation limit during walleye spawning in the spring each year and a two-foot daily limit during the remainder of the year. Additionally, reservoir drawdowns and refill rates are not allowed to exceed one foot per hour pursuant to WQC Condition 13.

The Applicant also selected **Standard E-Plus** for all Zones.

The Applicant makes annual financial contributions of \$10,000 (adjusted for inflation) to the Hudson/Sacandaga River Enhancement Fund per Section 8 of the Settlement Agreement. Funds may be used for projects, studies, or services providing ecosystem restoration or protection from the Conklingville Dam downstream to the Feeder Dam. The funding is a consolidated contribution for Sherman Island and three other projects on the upper Hudson River and Sacandaga River that are owned by Erie (E.J. West, Stewart's Bridge, and Feeder Dam).

A review of the FERC eLibrary indicated that no issues related to shoreline and watershed protection have occurred during the FERC licensing period.

Based on my review of the application, supporting documentation, and publicly available information, the Project is operated a manner that has a de minimis effect on the watershed. Therefore, the Project satisfies the Shoreline and Watershed Protection criterion. However, it does not appear that the level of funding when allocated across all four projects provides the equivalent land protection of at least 50% of the impoundment shoreline at this Project. Erie applied for and received the PLUS standard for the Feeder Dam Project, LIHI #164 which has only 3 acres of lands above water, so it is inappropriate to apply the PLUS standard for the same action at this Project.

F. THREATENED AND ENDANGERED SPECIES PROTECTION

Goal: The facility does not negatively impact federal or state listed species.

Assessment of Criterion Passage: The Applicant appropriately selected Standard F-3, Recovery Planning and Action, for all Zones.

Article 407 of the 2002 FERC license order required Erie to file a plan and schedule to conduct surveys for the Karner blue butterfly and blue lupine within six months of the issuance of the FERC license, and sixty days prior to any project-related ground disturbing activities. Erie filed the plan on July 28, 2003 which FERC approved on December 23, 2003. On January 21, 2004 Erie filed the Karner blue butterfly and blue lupine survey results from areas where recreational enhancements were required per the license order as well as in construction staging areas. Karner blue butterfly and blue lupine were absent from all survey areas.

The license order did mention that the draft EIS included a Biological Assessment (BA), which found that the bald eagle has been documented in and within the vicinity of the Hudson River Project area, but that its appearance appears to be transient in nature. The BA found that issuing the license for the Hudson River Project would have no effect on bald eagles. The FWS comments on the draft EIS did not discuss the bald eagle.

As noted in the FERC's 2007 Environmental and Public Use Inspection Report,¹³ and its 2007 Environmental Assessment for the base flow powerhouse construction and operation and the turbine installation and replacements at the existing powerhouse, Erie consulted with the FWS concerning its license amendment application with regard to the endangered Karner blue butterfly. By letter filed December 19, 2006, FWS stated that no potential habitat was observed for the Karner blue butterfly within the Project area. Therefore, staff determined in the 2007 Environmental Assessment that the proposed action would have no affect on threatened or endangered species or any designated critical habitat.

In its February 12, 2020 letter to Erie, FWS stated that the endangered Indiana bat may occur at the Project but there is no critical habitat in the Project boundary. Recovery actions identified in FWS' Indiana Bat Draft Recovery Plan¹⁴ include hibernacula and maternity colony related recovery actions. No Indiana bat hibernacula, which typically include caves and mines, are known to exist in the immediate vicinity of the Sherman Island Development.

Recovery actions identified in FWS's Karner Blue Butterfly Recovery Plan¹⁵ include

¹³ [20070207-0308](#)

¹⁴ https://www.fws.gov/midwest/Endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf

¹⁵ <https://www.fws.gov/midwest/endangered/insects/kbb/pdf/kbb-final-rp2.pdf>

identification and monitoring of a viable metapopulation. The Karner blue butterfly is known to be dependent on blue lupine, its only known larval food plant. Blue lupine and Karner blue butterfly have not been observed in the Project area.

In its March 1, 2020 letter to Erie, NYSDEC stated that the pygmy snaketail dragonfly (state species of concern) and extra-striped snaketail (state species of concern) may have been documented in the southern end of the Project in the town of Moreau. The NYSDEC has not adopted a formal recovery plan for the extra-striped snaketail or pygmy snaketail.

A review of the Project's record on the FERC eLibrary indicated that no other issues related to threatened and endangered species than those discussed above have occurred.

Based on my review of the application, supporting documentation, and publicly available information, the Project is not likely to impact listed species and therefore satisfies the Threatened and Endangered Species criterion.

G. CULTURAL AND HISTORIC RESOURCE PROTECTION

Goal: The facility does not unnecessarily impact cultural or historic resources that are associated with the Facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.

Assessment of Criterion Passage: The Applicant appropriately selected Standard G-2, Approved Plan for all Zones.

FERC noted in the Final EIS that no archeological sites within or in the vicinity of the Sherman Island Development had been formally recorded in the SHPO database. FERC approved the Cultural Resources Management Plan that was required pursuant to Article 409 and the 1996 Programmatic Agreement on June 3, 2005.

In its 2007 Environmental Assessment, FERC noted that by following the requirements of the CRMP prior to, and during construction activities, the licensee would provide appropriate protection to the characteristics of the Sherman Island development that would potentially make it eligible for listing in the NRHP or which may have cultural significance. As such, there would be no impact to historic properties as a result of the proposed license amendment.

As noted in FERC's 2007, 2013, and 2017 Environmental and Public Use Inspection Reports, Erie files an annual monitoring report on activities undertaken that may be subject to the CRMP and appears to be in compliance with the requirements of this article.

A review of the National Register of Historic Places database of Listed Properties did not find

any cultural or historic properties within any Zone of Effect. The only four properties listed in the database for the towns of Moreau and Queensbury, NY are well beyond the Project boundary. A review of the Project's annual CRMP reports to FERC show that during years when ground-disturbing work was performed at the Project, all required measures pertaining to the HPMP were taken prior to any ground-disturbing activities.

Based on a review of the FERC eLibrary, there does not appear to be any concern over Project operation and maintenance on cultural or historic resources. Therefore, the Project satisfies the Cultural and Historic Resource Protection criterion.

H. RECREATIONAL RESOURCES

Goal: The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.

Assessment of Criterion Passage: The Applicant appropriately selected Standard H-2, Agency Recommendations in all Zones.

Article 406 requires Erie to permit public access across its lands to the shoreline where project facilities, hazardous conditions, and leases, easements, and private ownership along the shorelines exist at the time of licensing do not preclude it. Article 406 also required Erie to make the following recreational enhancements:

(1) Modifications to the Sherman Island boat launch to include: (1) measures to improve parking and traffic flow; (2) a parking space that complies with the Americans with Disabilities Act (ADA); (3) a low-angle access trail to the water's edge and picnic area; (4) additional picnic tables; at least one of which complies with the ADA; and (5) the installation of privies on a trial basis.

(2) Construction of a canoe portage trail around the south (right bank) of the Sherman Island dam, to include: (1) measures to minimize ground disturbance and the potential for soil erosion during construction of the put-in and take-out areas, as well as the clearing of the trail; and (2) signs at the water's edge signifying the location of the take-out.

(3) Construction of two water-access-only campsites on the Sherman Island impoundment, to include: (1) measures designed and developed in consultation with the New York State Office of Parks, Recreation, and Historic Preservation to minimize ground disturbance, and (2) fire rings and canoe pull-out areas at the water's edge.

(4) Construction of angler access to the Sherman Island bypassed reach, to include: (1) a parking area for four cars off Potter Road; and (2) a foot trail leading along the existing maintenance road to the south side (right bank) of the reach.

On November 18, 2003 FERC issued an Order Approving the Recreation Plan, which was submitted to FERC on May 1, 2003. On December 7, 2011, Erie submitted two as-built Exhibit R drawings showing the completed recreational facilities. FERC’s review of the drawings found that they correctly displayed project works after completion of construction and subsequently approved the exhibits on February 2, 2012¹⁶.

The 2012 and 2017 FERC Environmental Inspection Reports both note that the licensee’s recreational facilities appeared to be in good condition and well maintained. However, the licensee was informed during the 2017 inspection that the Sherman Island boat launch area would need modified Part 8 signage to be in compliance with the existing license, signage was completed by September 29, 2017. Pursuant to its Public Safety Plan¹⁷ Erie provides fences with locked gates, guardrails, life rings, and updated warning signs to protect the public from Project operations.

A review of the FERC eLibrary indicated that no issues related to recreation have occurred during the FERC licensing period.

Based on my review of the application, supporting documentation, and publicly available information, the Project satisfies the Recreational Resources criterion.

VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION

Based on my review, I believe that the Project meets the requirements of Low Impact Certification and recommend it be certified for a five-year period with no conditions.

¹⁶ [20120202-3015](#)

¹⁷ 20191216-5034 (CEII)